To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Kent, Ray
Sent: Tue 5/26/2015 5:53:55 PM
Subject: RE: Glyphosate male mouse stats

Thanks, Lori…

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 1:38 PM
To: Kent, Ray
Subject: Glyphosate male mouse stats

Ray –

Attached are the Glyphosate male mouse hemangiosarcoma stats that will be presented at the CARC meeting on July 8th.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Deener, Kathleen[Deener.Kathleen@epa.gov]; Kavlock, Robert[Kavlock.Robert@epa.gov]; Cogliano, Vincent[cogliano.vincent@epa.gov]; Bahadori, Tina[Bahadori.Tina@epa.gov]
From: Burke, Thomas
Sent: Fri 11/27/2015 1:18:32 PM
Subject: Fwd: EFSA Glyphosate Recommendations
EFSA-Glyphosate-Letter.pdf
ATT00001.htm

FYI

Thomas A. Burke, PhD, MPH
Deputy Assistant Administrator
EPA Science Advisor
Office of Research and Development
202-564-6620
burke.thomas@epa.gov

Begin forwarded message:

From: Chris Portier <cportier@me.com>
Date: November 27, 2015 at 7:22:36 AM EST
To: "Dr. Linda Birnbaum" <birnbaumls@niehs.nih.gov>, "John Bucher (NIH/NIEHS)" <bucher@niehs.nih.gov>, Thomas Burke <burke.thomas@epa.gov>, Thomas Sinks <sinks.tom@epa.gov>
Subject: Fwd: EFSA Glyphosate Recommendations

FYI. This went out this morning and is embargoed for public release until 0:00 CET on Monday.
C.

Begin forwarded message:

From: Chris Portier <cportier@me.com>
Date: November 27, 2015 at 10:25:35 AM GMT+1
To: Andreas rummel <ak.rummel@t-online.de>, "Sass, Jennifer" <jsass@nrdc.org>, Angeliki Lysimachou <angeliki@pan-europe.info>, Meg Sears <meg@preventcancernow.ca>, Ann Doherty <amsterdamfarmer@xs4all.nl>, Martin Pigeon <martin@corporateeurope.org>, Stéphane Foucart <foucart@lemonde.fr>, Danny Hakim <hakim@nytimes.com>
Subject: EFSA Glyphosate Recommendations

Dear Addressees,

You have expressed an interest in opinions I or my colleagues might wish to express concerning the recent European Food Safety Agency (EFSA) decision that the widely used herbicide, glyphosate "is unlikely to pose a carcinogenic hazard to humans." Attached to this email is an open letter from 96 prominent epidemiologists, toxicologists, statisticians and molecular biologists from 25 countries. We have banded together and written a joint criticism of aspects of the EFSA review. Public release of this letter is **EMBARGOED**! Please do not release this letter before 0:00 CET, Monday 30 November, 2015. I will be happy to answer any questions you may have about the content of this letter; my contact information is on the letter. For those of you wishing to prepare newspaper articles or web articles on this letter and/or this issue, I have prepared three quotes from me that you are welcome to use. These are below.

Sincerely,

Prof. Christopher J. Portier

QUOTES:

"My reason for doing all of this work is quite simple, it does the science of risk assessment a disservice when carefully developed methods for analyzing and interpreting the evidence are put aside in favor of ad-hoc approaches that are either wrong, or not amenable to scrutiny by the broader scientific community.

For science to be effective in guiding public health decisions, there needs to be clarity, rigor, transparency, and common sense . The EFSA assessment has serious deficits in all of these areas.

Most importantly, to blindly assess the safety of pure glyphosate to which few people are exposed without considering the evidence on the glyphosate formulations that people are really exposed to is both scientifically flawed and makes little sense to the public."

November 27, 2015

Mr. Vytenis Andriukaitis
Commissioner Health & Food Safety
European Commission
Rue de la Loi / Wetstraat 200
1049 Brussels
Belgium

Cc: (email only)
- Mr. Phil Hogan, European Commissioner for Agriculture and Human Development
- Dr. Ladislav Miko, Deputy Director-General, DG Health & Food Safety
- Dr. Bernhard Url, Executive Director, EFSA
- Dr. Giovanni La Via, Chair, ENVI Committee
- EFSA Panel on Plant Protection Products and their Residues
- Mr. Christian Schmidt, Minister of Food and Agriculture
- Dr. Helmut Tschiersky, President of the Federal Office of Consumer Protection and Food Safety (BVL)
- Professor Dr. Dr. Andreas Hensel, President, BFR
- Dr. Christopher Wild, Director, IARC
- Mr. Jim Jones, Assistant Administrator, USEPA

Open letter: Review of the Carcinogenicity of Glyphosate by EFSA and BfR

Dear Commissioner Andriukaitis,

We are a group of independent academic and governmental scientists from around the world who have dedicated our professional lives to understanding the role of environmental hazards on cancer risks and human health. We have banded together and write to you at this time to express our deep concern over the recent European Food Safety Agency (EFSA) decision[1] that the widely used herbicide, glyphosate "is unlikely to pose a carcinogenic hazard to humans." We ask that you forward the letter to the representatives of all EU member states before the next meeting of the Standing Committee on Plants, Animals, Food and Feed (December 10/11).

The EFSA decision, based upon the Renewal Assessment Report[2] provided by the German Federal Institute for Risk Assessment (BfR), runs counter to the finding earlier this year by the International Agency for Research on Cancer (IARC), the highly respected cancer arm of the World Health Organization that glyphosate is a *probable human carcinogen*. This IARC classification is based on a comprehensive assessment of the peer-reviewed toxicologic and epidemiologic literature undertaken over a 12-month period by a Working Group of 17 independent expert scientists. The IARC review linked glyphosate to dose-related increases in malignant tumors at multiple anatomical sites in experimental animals and to an increased incidence of non- Hodgkin lymphoma in exposed humans.

We reviewed these two differing decisions on the human carcinogenicity of glyphosate and conclude that the IARC WG decision is by far the more credible. The IARC WG decision was reached relying on open and transparent procedures by independent scientists who completed thorough conflict-of-interest statements and were not affiliated or financially supported in any way by the chemical manufacturing industry. It is fully referenced and depends entirely on reports published in the open, peer-reviewed biomedical literature. It is part of a long tradition of deeply researched and highly credible reports on the carcinogenicity of hundreds of chemicals issued over the past four decades by IARC and used today by international agencies and regulatory bodies around the world as a basis for risk assessment, regulation and public health policy.

In contrast, the BfR decision is not credible because it is not supported by the evidence and it was not reached in an open and transparent manner.

Accordingly, we urge you and the European Commission to disregard the flawed EFSA finding on glyphosate in your formulation of glyphosate health and environmental policy for Europe and to call for a transparent, open and credible review of the scientific literature.

The IARC Working Group Decision

The International Agency for Research on Cancer (IARC) Monographs Programme identifies environmental causes of cancer in humans and has evaluated more than 950 agents since 1971. The Monographs Programme evaluates chemicals, drugs, mixtures, occupational exposures, lifestyles and personal habits, physical agents and biological agents. Monographs are written by an ad hoc Working Group (WG) of international scientific experts over a period of about 12 months ending in an eight-day meeting. The WG evaluates all of the publically-available scientific literature on a given substance and, through a transparent and rigorous process[3], reaches a decision on the degree to which the scientific evidence supports that substance's ability to cause or not cause cancer.

For Monograph 112[4], 17 expert scientists evaluated the carcinogenic hazard for 4 insecticides and the herbicide glyphosate[5]. The WG concluded that the data for glyphosate meets the criteria to be identified as a *probable human carcinogen*. This finding stirred great debate globally on the safety of glyphosate and led to a careful evaluation by numerous agencies of the IARC monograph results when they became available on July 29, 2015.

The BfR Addendum

In October, 2015, the EFSA reported[1] on their evaluation of the Renewal Assessment Report[2] (RAR) for glyphosate. EFSA concluded that "glyphosate is unlikely to pose a carcinogenic hazard to humans and the evidence does not support classification with regard to its carcinogenic potential". Addendum 1 (the BfR Addendum) of the RAR[2] discusses the scientific rationale for differing from the IARC WG conclusion.

We have serious concerns with regard to the scientific evaluation in the BfR Addendum and feel that it is misleading regarding the potential for a dose-dependent carcinogenic hazard from exposure to glyphosate. Since the BfR Addendum is the basis for the European Food Safety Agency (EFSA) conclusion[1], it is critical that we express these concerns. We are also concerned about some of the implications of the BfR Addendum regarding the use of human data in identifying carcinogenic hazards.

Our comments to the BfR Addendum will focus on the human evidence, the animal laboratory evidence and the mechanistic evidence.

The Human Evidence

The BfR agrees with the IARC WG that there is "*limited evidence* in humans for the carcinogenicity of glyphosate". In the IARC review process, *limited evidence* is assigned if "A positive association has been observed between exposure to the agent and cancer for which a causal interpretation is considered by the Working Group to be credible, but chance, bias or confounding could not be ruled out with reasonable confidence."[3] The EFSA conclusion that "glyphosate is unlikely to pose a carcinogenic hazard to humans" is inappropriate when available data support the determination of *limited evidence* of carcinogenicity in humans. The BfR Addendum (p. ii) characterizes the IARC interpretation as "precautionary" and that the BfR takes a more "cautious view" of this classification because "no consistent positive association was observed", "the most powerful study showed no effect" and that the studies "could not differentiate between the effects of glyphosate and the co-formulants". We will consider the first two arguments here and discuss the third argument at the end of this letter.

The finding of *limited evidence* by the IARC WG was for non-Hodgkin lymphoma (NHL). High-quality cohort studies are particularly valuable for determining the carcinogenicity of an agent because their design can facilitate exposure assessment and reduce the potential for certain biases. The Agricultural Health Study[6] (AHS) was the only cohort study available providing information on the carcinogenicity of glyphosate. The study had a null finding for NHL (RR 1.1, 0.7-1.9) with no apparent exposure response in the results. The BfR refers to this study as "the most powerful study" and notes that it was "negative" for NHL.

Several potential limitations of case-control studies are laid out in epidemiology textbooks[7, 8]. The BfR uses these limitations to label all of the case -control studies as unreliable. This gives the impression that all of the studies are equal in quality and unusable for an overall evaluation. This is not the case: well-designed case-control studies are recognized as an efficient alternative to cohort studies[8]. An IARC WG carefully evaluates all of the available epidemiology data, looking at the study's strengths and weaknesses. This is key to determining whether the positive associations seen in case-control studies are a reliable indication of an association or simply due to chance or methodological flaws. To provide a reasonable interpretation of the findings, an evaluation needs to properly weight studies according to their quality rather than simply count the number of positives and negatives. The meta-analyses cited in the IARC Monograph[9] and done by the WG

are excellent examples of an objective evaluation of the existence of a consistent positive association; both meta-analyses showed a statistically significant association. The BfR provided no justification for their evaluation of "no consistent positive association". Finally, despite the potential advantages of prospective cohort studies versus case-control, there are fewer cases to include in analyses, depending on the follow-up time resulting in limited statistical power. There were only 92 NHL cases included in the AHS unadjusted analysis and fewer in adjusted analyses, compared to 650 in a pooled case-control analysis from the United States[10].

The final BfR conclusion (p. 21) that "there was no unequivocal evidence for a clear and strong association of NHL with glyphosate" is misleading. IARC, like many other groups, uses three levels of evidence for human data[3]. *Sufficient evidence* means "that a causal relationship has been established" between glyphosate and NHL. IARC does not state that the evidence is *sufficient*. BfR concludes that the IARC designation of *limited evidence* was not applicable because there was not "an unequivocal and consistent excess". In fact, that is the equivalent to the criteria for *sufficient evidence*, not *limited evidence*. Thus BfR's conclusion is equivalent to concluding there is not *sufficient evidence*. Legitimate public health concerns arise when "causality is credible", i.e., when there is *limited evidence*. BfR's language is misleading and not internationally acceptable and thus fails to meet EC Guidelines.

Evidence from Animal Carcinogenicity Studies

We find the conclusions of the BfR regarding the animal carcinogenicity data to be scientifically unacceptable. The IARC WG review found a significant positive trend for renal tumors in CD-1 mice[11], a rare tumor although no comparisons of any individual exposure group to the control group were statistically significant. A significant positive trend means that the pattern seen in the data supports an increasing risk with increasing dose. The WG also identified a significant positive trend for hemangiosarcoma in male CD-1 mice[12], again with no individual exposure group significantly different from controls. Finally, the WG also saw a significant increase in the incidence of pancreatic islet cell adenomas in two studies in Sprague-Dawley rats[13-15]. In one of these rat studies, thyroid gland adenomas in females and liver adenomas in males were also increased. Thus, glyphosate was positive for malignant tumors in both of the mouse studies examined and for benign tumors in two of the five rat studies examined. By the IARC review criteria[3], the evidence in the mouse constitutes *sufficient evidence* in animals and the increased incidences of benign tumors constitutes additional support.

The BfR agreed, stating (p. 43) "it is obvious that IARC concludes on "*sufficient evidence* of carcinogenicity" because the above criteria for this conclusion are fully met." The IARC WG reached this conclusion using data that were publicly available in sufficient detail for independent scientific evaluation (a requirement of the IARC Preamble[3]). Based on the BfR Addendum, it seems there were three additional mouse studies and two additional rat studies that were unpublished but available for review. BfR reported on two additional studies with a positive trend for renal tumors, one in CD-1 mice[16], and one in Swiss-Webster mice[17]. One of these studies[16] also reported a positive trend for hemangiosarcoma. Moreover, BfR reported two studies in CD-1 mice showing significant trends for malignant

lymphoma[16, 18]. For all of the mouse tumors described above, a positive trend was seen against the concurrent control.

However, in all studies in CD-1 mice, including those reviewed by the IARC, the BfR dismisses the observed trends in tumor incidence because there are no individual treatment groups that are significantly different from controls and because the maximum observed response isreportedly within the range of the historical control data (Table 5.3-1, p. 90). Care must be taken in using historical control data to evaluate animal carcinogenicity data. In virtually all guidelines[3, 19], scientific reports[20] and publications[21-23] on this issue, the recommended first choice is the use of the concurrent controls. For instance, the Preamble to the IARC Monographs states, "it is generally not appropriate to discount a tumor response that is significantly increased compared with concurrent controls by arguing that it falls within the range of historical controls…".When using historical control data, they should be from studies in the same timeframe, for the same exact animal strain, preferably from the same laboratory or the same supplier and preferably reviewed by the same pathologist[19]. This was not the case for the historical control database used by BfR. One of the mouse studies[11] was clearly done before this historical control database was developed, one study[16] used Crj:CD-1 mice rather than Crl:CD-1 mice, and one study[12] did not specify the substrain and was reported in 1993 (probably started prior to 1988); hence only a single study[18] used the same mouse strain as the historical controls, but was reported more than 10 years after the historical control dataset was developed. Interestingly, the historical control data used by the BfR[24] was from studies inseven laboratories using the Charles River Laboratory CD1 mice. It is important to note that there is a second report[25] by the same authors with a larger control databaseusing the same mouse strain from 11 laboratories over the same time period (1987-2000) showing very different results. For example, the 2000 publication[24] shows five and four studies out of 46 with renal adenomas (no more than two in any one study) and renal adenocarcinomas (one in each study) respectively whereas the 2005 report[25] shows only one study each out of 54 studies with a singlerenal adenoma and a single renal adenocarcinoma; all other studies had no renal tumors.

Given this evidence, it is clear that BfR differed from standard scientific practices in order to reach their conclusions. BfR reported seven positive mouse studies with three studies showing increases in renal tumors, two with positive findings for hemangiosarcomas, and two with positive findings for malignant lymphomas. BfR additionally reported two positive findings for tumors in rats. Eliminating the inappropriate use of historical data, the unequivocal conclusion is that these are not negative studies, but in fact document the carcinogenicity of glyphosate in laboratory animals.

Mechanistic Information

The BfR Addendum dismisses the WG finding that "there is strong evidence that glyphosate causes genotoxicity" by suggesting that unpublished evidence not seen by the IARC WG was overwhelmingly negative and that, since the studies that were reviewed were not done under guideline principles, they should get less weight. To maintain transparency, IARC reviews only publicly available data. Thus the use of confidential data submitted to the BfR makes it impossible for any scientist not associated with BfR to review this conclusion with scientific

confidence. Further skewing their interpretation, the BfR did not include evidence of chromosomal damage from exposed humans[24] that was highlighted in the IARC Monograph.

The BfR confirms (p. 79) that the studies evaluated by the IARC WG on oxidative stress were predominantly positive but does not agree that this is strong support for an oxidative stress mechanism. They minimize the significance of these findings predominantly because of a lack of positive controls in some studies and because many of the studies used glyphosate formulations and not pure glyphosate. The WG concluded that (p. 77) "Strong evidence exists that glyphosate, AMPA and glyphosate-based formulations can induce oxidative stress". From a scientific perspective, these types of mechanistic studies can play a key role in distinguishing between the effects of mixtures, pure substances and metabolites and we encourage the BfR to carefully review this science.

Finally, we strongly disagree that data from studies published in the peer-reviewed literature should automatically receive less weight than guideline studies. Once a chemical or its formulations are on the market, the majority of the research done on these chemicals will be done by research laboratories using various models to address specific issues related to toxicity that will often not have testing guidelines associated with them. These peer-reviewed and published findings have great value in understanding mechanisms of carcinogenicity and should be given appropriate weight in an evaluation based on study quality and not just guideline rules.

General Comments

Science moves forward based on data, careful evaluation of those data and a rigorous review of the findings and conclusions. One important aspect of this process is transparency and the ability to question or debate the findings of others. This ensures the validity of the results and provides a strong basis for decisions. Many of the aspects of transparency do not exist for the RAR[2] or the BfR Addendum. For example, citations for almost all of the references, even those from the open scientific literature, have been redacted from the document. The ability to objectively evaluate the findings of a scientific report requires a complete list of the cited supporting evidence. As another example, there are no authors or contributors listed for either document, a requirement for publication in virtually all scientific journals. This is in direct contrast to the IARC WG evaluation listing all authors, all publications and public disclosure of pertinent conflicts of interest prior to the WG meeting[26].

A second important aspect of the scientific process is a careful evaluation and analysis of the facts. Several guidelines have been devised for analyzing carcinogenicity data, most after consultation with scientists from around the world. One of the most widely used guidelines is the OECD guidance on the conduct and design of chronic toxicity and carcinogenicity studies[19] which is cited in the BfR Addendum. This OECD guidance is in contradiction to the methods used by the BfR for both historical controls and for trend analysis; the two reasons given by the BfR for dismissing these data. Thus, BfR uses the

concept of testing guidelines to exclude substantive scientific evidence from their risk assessment and ignore OECD guidelines in addressing the important issues of historical controls and trend analyses.

Due to the potential public health implications of this extensively used pesticide it is essential that all scientific evidence be freely available, reviewed openly in an objective manner, and that financial support, conflicts of interest and affiliations of authors be fully disclosed. Many aspects of the evaluation conducted by the BfR and EFSA do not meet this fundamental objective criteria and raise significant questions of validity.

Summary

The IARC WG concluded that glyphosate is a "probable human carcinogen" putting it into IARC category 2A due to *sufficient evidence* of carcinogenicity in animals, *limited evidence* of carcinogenicity in humans and *strong* mechanistic data.

- The IARC WG found an association between non-Hodgkin lymphoma and glyphosate based on the available human evidence.
- The IARC WG found significant carcinogenic effects in laboratory animals for two tumor types in two mouse studies and benign tumors in two rat studies.
- Finally, the IARC WG concluded strong evidence of genotoxicity and oxidative stress for glyphosate, entirely from publicly available research, including findings of DNA damage in the peripheral blood of exposed humans.

In their RAR, BfR concluded (Vol. 1, p. 160) "classification and labeling for carcinogenesis is not warranted" and "glyphosate is devoid of genotoxic potential".

- BfR agreed with the IARC on *limited evidence* in humans but then dismissed the association as "insufficiently consistent" with no justification.
- Using an inappropriate historical control dataset in an incorrect manner and ignoring established OECD guidelines cited in their report, BfR dismissed evidence of renal tumors in 3 mouse studies, hemangiosarcoma in 2 mouse studies and malignant lymphoma in 2 mouse studies. Thus, BfR incorrectly discarded all of the glyphosate-induced carcinogenic findings in animals as chance occurrences.
- The BfR ignored important laboratory and human evidence of genotoxicity.
- The BfR confirmed that glyphosate induces oxidative stress and dismissed this finding for lack of any other finding because they had dismissed all of the other evidence.

The most parsimonious scientific explanation of the cancers seen in humans and laboratory animals supported by the mechanistic data is that glyphosate is a *probable* human carcinogen. On the basis of this conclusion and in the absence of

contrary evidence, it is reasonable to conclude that glyphosate formulations should also be considered probable human carcinogens.

We believe that the arguments promoted by the BfR to negate the human, animal and mechanistic evidence are fundamentally and scientifically flawed and should be rejected. We strongly object to the almost non-existent weight given to studies from the literature by the BfR and the strong reliance on non-publicly available data in a limited set of assays that define the minimum data necessary for the approval of a pesticide. We believe that the IARC WG evaluation of *probably carcinogenic to humans* accurately reflects the results of the published scientific literature on glyphosate and, on the face of it, the unpublished studies to which the BfR refers. Conversely, the BfR evaluation, and consequently the EFSA evaluation, do not reflect the available science.

Thus, repeating our earlier request, we urge you and the European Commission to disregard the flawed EFSA finding on glyphosate in your formulation of glyphosate health and environmental policy for Europe and to call for a transparent, open and credible review of the scientific literature.

The views expressed in this letter are the opinion of the scientists who are listed below and DO NOT imply an endorsement or support for these opinions by any organizations to which they are affiliated.

Sincerely,

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Retired Prof. of Biochemistry, Faculty of Pharmacy, Heidelberg University
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Tampa, Florida, USA

References

1. European Food Safety Authority, *Conclusion on the peer review of the pesticide risk assessment of the active substance glyphosate.* EFSA Journal, 2015. **13**(11): p. 4302.
2. European Food Safety Authority. *Final Addendum to the Renewal Assessment Report*. 2015; Available from: http://registerofquestions.efsa.europa.eu/roqFrontend/outputLoader?output=ON-4302.
3. IARC. *PREAMBLE TO THE IARC MONOGRAPHS* 2006; Available from: http://monographs.iarc.fr/ENG/Preamble/CurrentPreamble.pdf.
4. Guyton, K.Z., et al., *Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate.* Lancet Oncol, 2015. **16**(5): p. 490-1.
5. IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, *Glyphosate*, in *IARC Monogr Eval Carcinog Risks Hum*, I.M. Program, Editor. 2015. p. 1-92.
6. De Roos, A.J., et al., *Cancer incidence among glyphosate-exposed pesticide applicators in the Agricultural Health Study.* Environ Health Perspect, 2005. **113**(1): p. 49-54.
7. Checkoway, H., N. Pearce, and D. Kriebel, *Research methods in occupational epidemiology*. 2nd ed. Monographs in epidemiology and biostatistics. 2004, New York: Oxford University Press. xiv, 372 p.
8. Rothman, K.J., S. Greenland, and T.L. Lash, *Modern epidemiology*. 3rd ed. 2008, Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins. x, 758 p.
9. Schinasi, L. and M.E. Leon, *Non-Hodgkin lymphoma and occupational exposure to agricultural pesticide chemical groups and active ingredients: a systematic review and meta-analysis.* Int J Environ Res Public Health, 2014. **11**(4): p. 4449-527.
10. De Roos, A.J., et al., *Integrative assessment of multiple pesticides as risk factors for non-Hodgkin's lymphoma among men.* Occup Environ Med, 2003. **60**(9): p. E11.
11. Epa, *Glyphosate; EPA Reg. # 524-308; mouse oncogenicity study*, B. William Dykstra.Toxicology, Editor. 1985.
12. JCFA, *Evaluation of certain food additives and contaminants: Forty-ninth report of the Joint FAO/WHO Expert Committee on Food Additives*. 1999, Joint Committee on Food Additives (including C. Portier), World Health Organization/Food and Agriculture Organization: Geneva. p. 96.
13. Epa, *Second peer review of Glyphosate*. 1991. p. 1-19.
14. Epa, *Glyphosate - EPA Registration No. 524-308 - 2-Year Chronic Feeding/Oncogenicity Study in Rats with Technical Glyphosate*, I. William Dykstra.Toxicology Branch, Editor. 1991.
15. Epa, *Glyphosate; 2-Year Combined Chronic Toxicity/ Carcinogenicity Study in Sprague-Dawley Rats - List A Pesticide for Reregistration*, B. William Dykstra.Toxicology, Editor. 1991. p. 1-29.
16. Sugimoto, *18-Month Oral Oncogenicity Study in Mice.* Unpublished, designated ASB2012-11493 in BfR RAR, 1997.

17. Unknown, *A chronic feeding study of glyphosate (roundup technical) in mice.* unpublished, designated ABS2012-11491 in BfR RAR, 2001.
18. Unknown, *Glyphosate Technical: Dietary Carcinogencity Study in the Mouse.* Unpublished, designated ABS2012-11492 in BfR RAR, 2009.
19. OECD, *Guidance Document 116 on the Conduct and Design of Chronic Toxicity and Carcinogenicity Studies*, H.a.S.P. Environment, Editor. 2012, OECD: Paris.
20. NRC Committee to Review the Styrene Assessment in the National Toxicology Program 12th Report on Carcinogens, in *Review of the Styrene Assessment in the National Toxicology Program 12th Report on Carcinogens: Workshop Summary*. 2014, National Academies Press: Washington (DC).
21. Keenan, C., et al., *Best practices for use of historical control data of proliferative rodent lesions.* Toxicol Pathol, 2009. **37**(5): p. 679-93.
22. Haseman, J.K., G.A. Boorman, and J. Huff, *Value of historical control data and other issues related to the evaluation of long-term rodent carcinogenicity studies.* Toxicol Pathol, 1997. **25**(5): p. 524-7.
23. Greim, H., et al., *Evaluation of historical control data in carcinogenicity studies.* Hum Exp Toxicol, 2003. **22**(10): p. 541-9.
24. Giknis, M. and C. Clifford, *Spontaneous Neoplastic Lesions in the CrI:CD-1(ICR)BR Mouse*. 2000, Charles River Laboratories.
25. Giknis, M. and C. Clifford, *Spontaneous Neoplastic Lesions in the CrI:CD-1(ICR)BR Mouse in Control Groups from 18 Month to 2 year Studies*. 2005, Charles River Laboratories.
26. IARC Monograph 112. *List of Working Group Participants*. IARC Monogr Eval Carcinog Risks Hum 2015 26 March, 2015 [cited 2015 24 November]; Available from: http://monographs.iarc.fr/ENG/Meetings/vol112-participants.pdf.

To: Bahadori, Tina[Bahadori.Tina@epa.gov]
From: Blair, Susanna
Sent: Thur 11/12/2015 7:19:40 PM
Subject: glyphosate news

Roundup ingredient doesn't cause cancer -- E.U. regulators

Published: Thursday, November 12, 2015

Glyphosate is unlikely to cause cancer in humans, European regulators said today.

The European Food Safety Authority ruled today that glyphosate, the key ingredient in Monsanto Co.'s Roundup herbicide, probably does not cause cancer in humans despite a finding by the International Agency for Research on Cancer earlier this year that the chemical is a probable carcinogen (*E&ENews PM*, March 24).

The report "confirms the previous evaluations of glyphosate by regulatory authorities around the world, which have consistently concluded that the application of glyphosate poses no unacceptable risk to human health, animals or the environment," said Richard Garnett, chairman of the Glyphosate Task Force, an industry group.

Despite clearing glyphosate, the EFSA proposed new limits on how much residue from the substance could remain on food meant for human consumption.

The EFSA's finding on glyphosate could allow its continued use in Europe. Environmental groups have said it should be banned in light of the IARC's report (Barbara Lewis, Reuters, Nov. 12). **-- SP**

Susanna W. Blair, PhD

Physical Scientist

EPA Office of Research and Development – Chemical Safety for Sustainability

Ronald Reagan Building, MC8101R

Washington DC 20460

202.564.4371 (office) | 202.322.0538 (cell) | Blair.susanna@epa.gov

To: 'Kelly Magurany (ConAgra Foods)'[Kelly.Magurany@conagrafoods.com]
Cc: Anderson, Neil[Anderson.Neil@epa.gov]; Moriarty, Thomas[Moriarty.Thomas@epa.gov]; Cyran, Carissa[Cyran.Carissa@epa.gov]
From: Nguyen, Khue
Sent: Tue 6/16/2015 3:05:15 PM
Subject: RE: Glyphosate

Hi Kelly,

Thank you for your inquiry. Glyphosate is in the middle of registration review, our reevaluation process, here at the Office of Pesticide Programs. We are scheduled to release the human health and ecological preliminary risk assessments later this year for public comment. As part of that review process, EPA is planning to reevaluate the cancer classification of glyphosate. We cannot say at this point whether we agree or disagree with the IARC conclusions, as we have not yet released our risk assessments.

You can find more information and the supporting documents for glyphosate registration review at www.regulations.gov in docket EPA-HQ-OPP-2009-0361. I hope this helps, and please let me know if you have additional questions.

Thanks,

Khue Nguyen

Chemical Review Manager

Risk Management and Implementation Branch 1

Pesticide Re-evaluation Division

Office of Pesticide Programs, EPA

703-347-0248

Nguyen.khue@epa.gov

From: Cyran, Carissa
Sent: Monday, June 15, 2015 5:08 PM
To: 'Kelly Magurany (ConAgra Foods)'
Cc: Nguyen, Khue
Subject: RE: Glyphosate

Hello, Kelly,

I no longer work in the Office of Pesticides so you will need to contact Khue Nguyen who is now the review manager for glyphosate.

Thank you,

Carissa

Carissa Cyran

Office of Air and Radiation

U.S. Environmental Protection Agency
Phone: (202) 564-5437

From: Kelly Magurany (ConAgra Foods) [mailto:Kelly.Magurany@conagrafoods.com]
Sent: Monday, June 15, 2015 5:07 PM
To: Cyran, Carissa
Subject: Glyphosate

Hi Carissa-

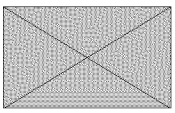
My name is Kelly Magurany, I am a toxicologist, evaluating the current state of glyphosate relative to the recent IARC classification. I wondered whether you might share with me whether EPA is considering this classification and if so, what is the timeline for your review.

I'd be happy to discuss by phone. My interest is to determine any impact of intended EPA activity on current registrations that may be applied to food crop.

I look forward to any feedback that you may be able to provide.

Thanks much!

Best, Kelly



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Principal Research Scientist-Toxicology | *Food Protection & Regulatory Affairs*
215 W Diehl Rd | Naperville, IL 60563

p: 630.857.1608 | c: 630.220.0026
kelly.magurany@conagrafoods.com

From: Kidwell, Jessica
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Kent, Ray
Sent: Wed 9/23/2015 3:59:40 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I'm in the office and I can't edit the file. It says "locked for editing by Lori Brunsman"…

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I think the problem must have to do with accessing Sharepoint from home. It works fine here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Maybe there's some code in there preventing us from editing. I don't know.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:47 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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This still doesn't work for me. Does it work for anyone else? If it's not working I'm going to take it down. Please let me know.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:43 AM
To: Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Cc: Kidwell, Jessica
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Let's see if we're able to edit this version. This is Jess's file which has Cal's formatting edits. Please share this with anyone I missed on CARC.

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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Rowland, Jess
Sent: Wed 9/23/2015 3:51:20 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

At home it should be called share pointless □. Another crown □ of OEI

Sent from my Windows Phone

From: Brunsman, Lori
Sent: 9/23/2015 11:48 AM
To: Kidwell, Jessica; Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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Lori

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To: Kidwell, Jessica[kidwell.jessica@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
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I'll use Cal's version.

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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:50:34 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Then it's not working there either.

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:50 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

No green circle here, either.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica

Sent: Wednesday, September 23, 2015 11:48 AM
To: Brunsman, Lori; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

You get the green circle when you save it?

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

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"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan;

Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Sent: Wednesday, September 23, 2015 11:43 AM
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Cc: Kidwell, Jessica
Subject: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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From: Middleton, Karlyn
Sent: Wed 9/23/2015 3:49:05 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

No circle.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Brunsman, Lori; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
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Office of Chemical Safety and Pollution Prevention

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One Potomac Yard S-10934

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From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:48:21 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Sent: Wednesday, September 23, 2015 11:48 AM
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To: Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:47:48 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Maybe there's some code in there preventing us from editing. I don't know.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:47 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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From: Middleton, Karlyn
Sent: Wed 9/23/2015 3:46:58 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:46:04 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Sent: Wednesday, September 23, 2015 11:43 AM
To: Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Cc: Kidwell, Jessica
Subject: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]
From: Kidwell, Jessica
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Cc: Rowland, Jess[Rowland.Jess@epa.gov]
From: Rowland, Jess
Sent: Tue 9/22/2015 5:43:19 PM
Subject: Rowland, Jess has shared 'Glyphosate CARC Final 9.21.15'

Here's the document that Rowland, Jess shared with you.

Open Glyphosate CARC Final 9.21.15.docx

Followthis document to get updates in your newsfeed.

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Chen, Jonathan
Sent: Tue 9/15/2015 7:45:18 PM
Subject: RE: Glyphosate CARC Package

Thank you.

Jonathan Chen

From: Brunsman, Lori
Sent: Tuesday, September 15, 2015 3:04 PM
To: Chen, Jonathan
Subject: RE: Glyphosate CARC Package

Jonathan –

There are a TON of documents. I will at least get the CARC package to you this afternoon and the rest of the documents to you tomorrow morning before the meeting.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Chen, Jonathan
Sent: Tuesday, September 15, 2015 2:55 PM
To: Brunsman, Lori
Subject: FW: Glyphosate CARC Package

Dear Lori:

Can you send me the documents? I cannot access the CARC packages from Lotus Note.

Jonathan Chen

From: Brunsman, Lori
Sent: Wednesday, September 09, 2015 1:58 PM
To: Akerman, Gregory; Brunsman, Lori; Chen, Jonathan; Dunbar, Anwar; Kent, Ray; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Middleton, Karlyn; OPP HED Notes Coordinators; Rowland, Jess; Shah, Pv; Woo, Yintak; Wood, Charles; Lobdell, Danelle; Morton, Thurston; Smith, Charles
Subject: Glyphosate CARC Package

The Glyphosate CARC package is now on the Lotus Notes database.

Please let me know if you cannot access it and I will email you the documents.

REMINDER: the Glyphosate CARC meeting is an **ALL-DAY** meeting (9:00 am to 4:00 pm) next **Wednesday, September 16, 2015**, in room S-10100.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Chen, Jonathan
Sent: Tue 9/15/2015 6:55:05 PM
Subject: FW: Glyphosate CARC Package

Dear Lori:

Can you send me the documents? I cannot access the CARC packages from Lotus Note.

Jonathan Chen

From: Brunsman, Lori
Sent: Wednesday, September 09, 2015 1:58 PM
To: Akerman, Gregory; Brunsman, Lori; Chen, Jonathan; Dunbar, Anwar; Kent, Ray; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Middleton, Karlyn; OPP HED Notes Coordinators; Rowland, Jess; Shah, Pv; Woo, Yintak; Wood, Charles; Lobdell, Danelle; Morton, Thurston; Smith, Charles
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Lori

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Lori Brunsman, Statistician and Project Officer

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brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Wood, Charles
Sent: Thur 9/10/2015 1:08:50 PM
Subject: RE: Glyphosate DERs and Support Docs: Part 1 of 2

Thanks, Lori. Sorry for the trouble!

--Charles

From: Brunsman, Lori
Sent: Thursday, September 10, 2015 8:26 AM
To: Wood, Charles
Subject: Glyphosate DERs and Support Docs: Part 1 of 2

Charles –

There are a LOT of documents in the Glyphosate CARC package. I will send them to you in multiple emails.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Wood, Charles
Sent: Wednesday, September 09, 2015 3:08 PM
To: Brunsman, Lori
Subject: RE: Glyphosate CARC Package

Hi Lori,

Can you email me the package?

--Charles

From: Brunsman, Lori
Sent: Wednesday, September 09, 2015 1:58 PM
To: Akerman, Gregory; Brunsman, Lori; Chen, Jonathan; Dunbar, Anwar; Kent, Ray; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Middleton, Karlyn; OPP HED Notes Coordinators; Rowland, Jess; Shah, Pv; Woo, Yintak; Wood, Charles; Lobdell, Danelle; Morton, Thurston; Smith, Charles
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"When you have more than you need, build a longer table, not a higher fence."

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Wood, Charles
Sent: Wed 9/9/2015 7:08:04 PM
Subject: RE: Glyphosate CARC Package

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--Charles

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Sent: Wednesday, September 09, 2015 1:58 PM
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From: Brunsman, Lori
Sent: Wed 9/9/2015 5:58:01 PM
Subject: Glyphosate CARC Package

The Glyphosate CARC package is now on the Lotus Notes database.

Please let me know if you cannot access it and I will email you the documents.

REMINDER: the Glyphosate CARC meeting is an **ALL-DAY** meeting (9:00 am to 4:00 pm) next **Wednesday, September 16, 2015**, in room S-10100.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Akerman, Gregory
Sent: Wed 9/9/2015 5:34:51 PM
Subject: glyphosate CARC meeting

Hi Lori Since (I think) you send out the meeting invites for the CARC meetings, would you remind the CARC members that there is an extended CARC meeting next Wed and that the meeting materials are on the CARC dbase?

Thanks,

Greg

From: Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Declined: Glyphosate CARC Meeting
Start Date/Time: Wed 9/16/2015 2:30:00 PM
End Date/Time: Wed 9/16/2015 4:30:00 PM

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Davis, Donna
Sent: Wed 8/26/2015 12:28:27 PM
Subject: RE: CARC needs S-10100 on 9/16/15 all day

Lori,

I don't have an 8:30 – 9:30 slot reserved in 10100 for ChemSAC. My calendar doesn't show anything….

Donna

From: Brunsman, Lori
Sent: Wednesday, August 26, 2015 7:07 AM
To: Davis, Donna
Subject: RE: CARC needs S-10100 on 9/16/15 all day

Donna –

Thank you for releasing the room reservation for S-10100 on 9/16/15. However, you released the 9:30-10:30 time slot, but not the 8:30-9:30 time slot. The Glyphosate CARC meeting starts at 9:00. If you could please release that earlier room reservation, too, I'd appreciate it.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

From: Davis, Donna
Sent: Tuesday, August 25, 2015 1:52 PM
To: Brunsman, Lori; Keller, Nancy
Cc: Wilbur, Donald; VanAlstine, Julie; Morton, Thurston; Rowland, Jess
Subject: RE: CARC needs S-10100 on 9/16/15 all day

Lori,

We were planning to meet and were doing a big training session in the room. Sounds like Jess is going to trump us. I will tell the co-chairs that we have been displaced. We may have to delay our training.

Donna

From: Brunsman, Lori
Sent: Tuesday, August 25, 2015 8:44 AM
To: Davis, Donna; Keller, Nancy
Subject: CARC needs S-10100 on 9/16/15 all day

Donna and Nancy –

We are having a marathon CARC meeting on Glyphosate all day (9:00 am – 4:00 pm) on Wednesday, September 16. I see that you have room S-10100 reserved for part of that day. Are you still having meetings on that day and, if so, would it be possible for you to move your meetings to another meeting room on that day?

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

From: Rowland, Jess
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 9/16/2015 4:30:00 PM
End Date/Time: Wed 9/16/2015 8:30:00 PM

From: Rowland, Jess
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 9/16/2015 2:30:00 PM
End Date/Time: Wed 9/16/2015 4:30:00 PM

From: DCRoomPYS10100/Potomac-Yard-One
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 9/16/2015 2:30:00 PM
End Date/Time: Wed 9/16/2015 4:30:00 PM

Your request was accepted.

Sent by Microsoft Exchange Server 2016

From: DCRoomPYS10100/Potomac-Yard-One
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 9/16/2015 1:30:00 PM
End Date/Time: Wed 9/16/2015 2:30:00 PM

Your request was accepted.

Sent by Microsoft Exchange Server 2016

From: DCRoomPYS10100/Potomac-Yard-One
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 9/16/2015 4:30:00 PM
End Date/Time: Wed 9/16/2015 8:30:00 PM

Your request was accepted.

Sent by Microsoft Exchange Server 2016

From: Rowland, Jess
Required Attendees: akerman.gregory@epa.gov; Lori Brunsman; Chen, Jonathan; Kent, Ray; Kidwell, Jessica; Liccione, John; Lobdell, Danelle; Middleton, Karlyn; Shah, Pv; Woo, Yintak; Wood, Charles; Morton, Thurston; Smith, Charles; McCarroll, Nancy; Dunbar, Anwar
Location: 10100
Importance: Normal
Subject: Glyphosate - CARC
Start Date/Time: Wed 9/16/2015 1:00:00 PM
End Date/Time: Wed 9/16/2015 4:00:00 PM

Greg et al.,

Please note the earlier start time
Make necessary changes to your schedule to accommodate this meeting.
You will receive the CARC package on September 2nd.
Thanks

JR

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Lobdell, Danelle
Sent: Wed 6/17/2015 6:20:02 PM
Subject: Re: Glyphosate CARC Meeting

Thank you

Sent from my iPhone

On Jun 17, 2015, at 11:18 AM, Brunsman, Lori <Brunsman.Lori@epa.gov> wrote:

Danelle –

The CARC meeting on Glyphosate has been cancelled. No CARC meeting will be held.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

From: Lobdell, Danelle
Sent: Wednesday, June 10, 2015 4:31 PM
To: Brunsman, Lori
Subject: RE: Glyphosate CARC Meeting

Hi Lori,

Can you send a new updated invite for this meeting? You deleted the previous invite (which did update for July 8th) and it is now off of my calendar.

Thank you,

Danelle

Danelle T. Lobdell, Ph.D., M.S.

Epidemiologist

National Health and Environmental Effects Research Laboratory

Environmental Public Health Division

Mail:

USEPA

MD 58A

Research Triangle Park, NC 27711

Package Delivery:

USEPA Human Studies Facility

104 Mason Farm Rd, Room 52

Chapel Hill, NC 27514-4512

Phone: 919-843-4434 Fax: 919-966-7584

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv

Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Lobdell, Danelle
Sent: Wed 6/10/2015 8:31:00 PM
Subject: RE: Glyphosate CARC Meeting

Hi Lori,

Can you send a new updated invite for this meeting? You deleted the previous invite (which did update for July 8th) and it is now off of my calendar.

Thank you,

Danelle

Danelle T. Lobdell, Ph.D., M.S.

Epidemiologist

National Health and Environmental Effects Research Laboratory

Environmental Public Health Division

Mail:

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Research Triangle Park, NC 27711

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Chapel Hill, NC 27514-4512

Phone: 919-843-4434 Fax: 919-966-7584

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Rowland, Jess
Sent: Tue 6/2/2015 2:11:49 PM
Subject: Glyphosate

Hi Lori
Please cancel the Glyphosate CARC meeting.
Thanks
JR
Sent from my Windows Phone

From: Kidwell, Jessica
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Rowland, Jess
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Wood, Charles
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Dunbar, Anwar
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Middleton, Karlyn
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Kent, Ray
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Akerman, Gregory
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: Lobdell, Danelle
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: McCarroll, Nancy
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

From: DCRoomPYS10100/Potomac-Yard-One
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

Your request was accepted.

Sent by Microsoft Exchange Server 2016

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Rowland, Jess
Sent: Tue 5/26/2015 5:47:43 PM
Subject: RE: Charles would likely miss Glyphosate CARC Meeting on July 8th

Thanks for this. Charles said he will find a Starbucks and call in from the beach. So pl go ahead and reschedule.

Sent from my Windows Phone

From: Brunsman, Lori
Sent: 5/26/2015 1:45 PM
To: Rowland, Jess
Subject: Charles would likely miss Glyphosate CARC Meeting on July 8th

Charles is the only person on the CARC who has indicated they could not make a meeting on July 8th.

Lori

From: Wood, Charles
Sent: Tuesday, May 26, 2015 9:59 AM
To: Brunsman, Lori
Cc: Rowland, Jess
Subject: RE: Glyphosate CARC Meeting

Hi Lori,

I will be traveling on Jul 8th and would likely miss a CARC meeting on that day.

--Charles

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv

Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]
From: Shah, Pv
Sent: Tue 5/26/2015 3:29:14 PM
Subject: RE: Glyphosate CARC Meeting

ok

P. V. Shah, Ph.D
Chief, Chemistry, Inerts and Toxicology Assessment Branch (CITAB)
Registration Division
Office of Pesticides Programs, US EPA
1200 Pennsylvania Ave., NW
Washington, DC 20460 (USA)
Phone: 703-308-1846
Fax: 703-605-0781
Shah.Pv@epa.gov

For FED EX and UPS Deliveries: One Potomac Yard (South Building), 2777 Crystal Drive (Room S-7751), Arlington, VA 22202

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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Health Effects Division
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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
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To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Akerman, Gregory
Sent: Tue 5/26/2015 1:59:36 PM
Subject: RE: Glyphosate CARC Meeting

The 8TH is fine for me

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
Cc: Rowland, Jess[Rowland.Jess@epa.gov]
From: Wood, Charles
Sent: Tue 5/26/2015 1:59:16 PM
Subject: RE: Glyphosate CARC Meeting

Hi Lori,

I will be traveling on Jul 8th and would likely miss a CARC meeting on that day.

--Charles

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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Health Effects Division
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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Chen, Jonathan
Sent: Tue 5/26/2015 1:55:50 PM
Subject: RE: Glyphosate CARC Meeting

July 8th is good for me.

Jonathan Chen

Jonathan Chen

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
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To: OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Brunsman, Lori
Sent: Tue 5/26/2015 1:25:29 PM
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

From: Brunsman, Lori
Required Attendees: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Optional Attendees: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

To: Wood, Charles[Wood.Charles@epa.gov]
Cc: Akerman, Gregory[Akerman.Gregory@epa.gov]
From: Lobdell, Danelle
Sent: Tue 9/29/2015 4:36:19 PM
Subject: RE: CARC signature page-

Thanks Charles. Just sent to Greg.

Danelle

Danelle T. Lobdell, Ph.D., M.S.

Epidemiologist

National Health and Environmental Effects Research Laboratory

Environmental Public Health Division

Mail:

USEPA

MD 58A

Research Triangle Park, NC 27711

Package Delivery:

USEPA Human Studies Facility

104 Mason Farm Rd, Room 52

Chapel Hill, NC 27514-4512

Phone: 919-843-4434 Fax: 919-966-7584

From: Wood, Charles
Sent: Tuesday, September 29, 2015 11:37 AM
To: Lobdell, Danelle
Cc: Akerman, Gregory
Subject: RE: CARC signature page-

Hi Danelle,

Attached is the signature page for the glyphosate CARC document. If you would, please sign, re-scan, and send back to Greg.

Thanks,

Charles

From: Akerman, Gregory
Sent: Tuesday, September 29, 2015 11:27 AM
To: Wood, Charles
Subject: CARC signature page-

Hi Charles,

I have attached the signature page for the CARC document for glyphosate. After signing it, would you mind sending it electronically to Danelle Lobdell for her signature? I will send her a note asking her to email it back to me after she signs it. I apologize for the inconvenience, but we are on a tight time schedule to get this document signed.

Thanks so much for all your constructive comments and edits.

Regards,

Greg

Gregory Akerman, Ph.D.

Office of Pesticide Programs, U.S. EPA

Health Effects Division
1200 Pennsylvania Avenue, NW (7509P)
Washington, DC 20460
phone: (703) 305-0116

e-mail: akerman.gregory@epa.gov

To: Wood, Charles[Wood.Charles@epa.gov]
From: Akerman, Gregory
Sent: Tue 9/29/2015 3:26:38 PM
Subject: CARC signature page-
Glyphosate CARC signature page.pdf

Hi Charles,

I have attached the signature page for the CARC document for glyphosate. After signing it, would you mind sending it electronically to Danelle Lobdell for her signature? I will send her a note asking her to email it back to me after she signs it. I apologize for the inconvenience, but we are on a tight time schedule to get this document signed.

Thanks so much for all your constructive comments and edits.

Regards,

Greg

Gregory Akerman, Ph.D.

Office of Pesticide Programs, U.S. EPA

Health Effects Division
1200 Pennsylvania Avenue, NW (7509P)
Washington, DC 20460
phone: (703) 305-0116

e-mail: akerman.gregory@epa.gov

COMMITTEE MEMBERS IN ATTENDANCE:

Jess Rowland, M.S., Chair

Karlyn Middleton, M.S., Co-Chair

Gregory Akerman, Ph.D.

Lori Brunsman, B.S.

Jonathan Chen, Ph.D.

Anwar Dunbar, Ph.D.

Ray Kent, Ph.D.

Jessica Kidwell, M.S.

John Liccione, Ph.D.

Dannelle Lobdell, Ph.D., Epidemiologist, ORD

Nancy McCarroll, M.S.

Chris Schlosser, M.S.

Charles Wood D.V.M., Ph.D., Pathologist, ORD

To: Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]
From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:43:04 PM
Subject: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Let's see if we're able to edit this version. This is Jess's file which has Cal's formatting edits. Please share this with anyone I missed on CARC.

Open Glyphosate CARC Final 9.21.15_cpr_JMK.docx

Followthis document to get updates in your newsfeed.

To: Wood, Charles[Wood.Charles@epa.gov]
From: Brunsman, Lori
Sent: Thur 9/10/2015 1:11:07 PM
Subject: RE: Glyphosate DERs and Support Docs: Part 1 of 2

You're welcome! There should have been a total of 15 emails.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Wood, Charles
Sent: Thursday, September 10, 2015 9:09 AM
To: Brunsman, Lori
Subject: RE: Glyphosate DERs and Support Docs: Part 1 of 2

Thanks, Lori. Sorry for the trouble!

--Charles

From: Brunsman, Lori
Sent: Thursday, September 10, 2015 8:26 AM
To: Wood, Charles
Subject: Glyphosate DERs and Support Docs: Part 1 of 2

Charles –

There are a LOT of documents in the Glyphosate CARC package. I will send them to you in multiple emails.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

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Environmental Protection Agency
One Potomac Yard S-10934

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703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Wood, Charles
Sent: Wednesday, September 09, 2015 3:08 PM
To: Brunsman, Lori
Subject: RE: Glyphosate CARC Package

Hi Lori,

Can you email me the package?

--Charles

From: Brunsman, Lori
Sent: Wednesday, September 09, 2015 1:58 PM
To: Akerman, Gregory; Brunsman, Lori; Chen, Jonathan; Dunbar, Anwar; Kent, Ray; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Middleton, Karlyn; OPP HED Notes Coordinators; Rowland, Jess; Shah, Pv; Woo, Yintak; Wood, Charles; Lobdell, Danelle; Morton, Thurston; Smith, Charles
Subject: Glyphosate CARC Package

The Glyphosate CARC package is now on the Lotus Notes database.

Please let me know if you cannot access it and I will email you the documents.

REMINDER: the Glyphosate CARC meeting is an **ALL-DAY** meeting (9:00 am to 4:00 pm) next **Wednesday, September 16, 2015**, in room S-10100.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Wood, Charles[Wood.Charles@epa.gov]
From: Brunsman, Lori
Sent: Thur 9/10/2015 12:42:32 PM
Subject: Glyphosate Review Articles: Part 3 of 3
Mink et al., 2011 Non Cancer Review.mht
Mink et al., 2012 Cancer Review.mht
Williams et al 2000.pdf

These attachments are the last of the Glyphosate CARC package.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]
Cc: Brunsman, Lori[Brunsman.Lori@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]
From: Liccione, John
Sent: Thur 9/24/2015 11:49:26 AM
Subject: RE: Glyphosate CARC Report

It happened to me too.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:27 AM
To: Rowland, Jess
Cc: Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher; Akerman, Gregory
Subject: RE: Glyphosate CARC Report

Hi all,

For some reason, I can't upload my comments to share point. It says that its locked for editing for me. Did this happen to anyone else?

From: Rowland, Jess
Sent: Tuesday, September 22, 2015 2:01 PM
To: Akerman, Gregory; Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher
Subject: Glyphosate CARC Report

Hi

Hope you all received the CARC draft thru sharepoint.

Please make the edits on sharepoint so I can see the comments

Do NOT waste time on format, paginations, tabs etc. CPR is do the "document makeover"

Concentrate on the science

Make this as your priority and your "home pope work" on Wednesday

I would like to have your comments not later than COB Thursday

Thank you for all your work on this CARC

Regards

JR

Jess Rowland,

Deputy Director
Health Effects Division
703-308-2719

To: Kent, Ray[Kent.Ray@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/23/2015 4:13:39 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Ray –

Try again. I just logged out of the document.

So can only one person edit it at a time? Maybe that's why people are having trouble saving the file; maybe more than one person was accessing it at the same time.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kent, Ray
Sent: Wednesday, September 23, 2015 12:00 PM
To: Brunsman, Lori; Kidwell, Jessica; Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle;

Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I'm in the office and I can't edit the file. It says "locked for editing by Lori Brunsman"…

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I think the problem must have to do with accessing Sharepoint from home. It works fine here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan;

Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Maybe there's some code in there preventing us from editing. I don't know.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:47 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

This still doesn't work for me. Does it work for anyone else? If it's not working I'm going to take it down. Please let me know.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:43 AM
To: Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Cc: Kidwell, Jessica
Subject: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Let's see if we're able to edit this version. This is Jess's file which has Cal's formatting edits. Please share this with anyone I missed on CARC.

Open Glyphosate CARC Final 9.21.15_cpr_JMK.docx

Followthis document to get updates in your newsfeed.

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Kent, Ray
Sent: Wed 9/23/2015 3:59:40 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I'm in the office and I can't edit the file. It says "locked for editing by Lori Brunsman"…

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I think the problem must have to do with accessing Sharepoint from home. It works fine here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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From: Middleton, Karlyn
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Cc: Kidwell, Jessica
Subject: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Followthis document to get updates in your newsfeed.

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Rowland, Jess
Sent: Wed 9/23/2015 3:51:20 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

At home it should be called share pointless □. Another crown □ of OEI

Sent from my Windows Phone

From: Brunsman, Lori
Sent: 9/23/2015 11:48 AM
To: Kidwell, Jessica; Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Lori

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To: Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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From: Middleton, Karlyn
Sent: Wed 9/23/2015 3:51:08 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I'll use Cal's version.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Middleton, Karlyn; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:50:34 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Then it's not working there either.

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:50 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

No green circle here, either.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica

Sent: Wednesday, September 23, 2015 11:48 AM
To: Brunsman, Lori; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

You get the green circle when you save it?

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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From: Kidwell, Jessica
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To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan;

Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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Sent: Wednesday, September 23, 2015 11:43 AM
To: Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Cc: Kidwell, Jessica
Subject: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Let's see if we're able to edit this version. This is Jess's file which has Cal's formatting edits. Please share this with anyone I missed on CARC.

Open Glyphosate CARC Final 9.21.15_cpr_JMK.docx

Followthis document to get updates in your newsfeed.

To: Kidwell, Jessica[kidwell.jessica@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/23/2015 3:50:02 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

No green circle here, either.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Brunsman, Lori; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

You get the green circle when you save it?

From: Brunsman, Lori

Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

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To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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To: Kidwell, Jessica[kidwell.jessica@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Middleton, Karlyn
Sent: Wed 9/23/2015 3:49:05 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

No circle.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:48 AM
To: Brunsman, Lori; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

You get the green circle when you save it?

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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Health Effects Division
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Office of Chemical Safety and Pollution Prevention

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To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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To: Kidwell, Jessica[kidwell.jessica@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/23/2015 3:48:27 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

I think the problem must have to do with accessing Sharepoint from home. It works fine here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
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Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Maybe there's some code in there preventing us from editing. I don't know.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:47 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

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Sent: Wednesday, September 23, 2015 11:46 AM
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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]
From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:48:21 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

You get the green circle when you save it?

From: Brunsman, Lori
Sent: Wednesday, September 23, 2015 11:48 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:47:48 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Maybe there's some code in there preventing us from editing. I don't know.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:47 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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Cc: Kidwell, Jessica
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From: Brunsman, Lori
Sent: Wed 9/23/2015 3:47:36 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

It works for me here at the office.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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From: Middleton, Karlyn
Sent: Wed 9/23/2015 3:46:58 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

Not working.

From: Kidwell, Jessica
Sent: Wednesday, September 23, 2015 11:46 AM
To: Kidwell, Jessica; Akerman, Gregory; Lobdell, Danelle; Brunsman, Lori; Chen, Jonathan; Liccione, John; Wood, Charles; Middleton, Karlyn; Dunbar, Anwar; Rowland, Jess; Kent, Ray; McCarroll, Nancy
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From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:46:04 PM
Subject: RE: Kidwell, Jessica has shared 'Glyphosate CARC Final 9.21.15_cpr_JMK'

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Cc: Brunsman, Lori[Brunsman.Lori@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Liccione, John[Liccione.John@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]
From: Kidwell, Jessica
Sent: Wed 9/23/2015 3:30:16 PM
Subject: RE: Glyphosate CARC tReport

Yes, Greg and I can't either. I'm actually using Cal's version since he made formatting edits instead of the file on the share drive that Lori's referring to. Do you want me to share this file?

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:27 AM
To: Rowland, Jess
Cc: Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher; Akerman, Gregory
Subject: RE: Glyphosate CARC Report

Hi all,

For some reason, I can't upload my comments to share point. It says that its locked for editing for me. Did this happen to anyone else?

From: Rowland, Jess
Sent: Tuesday, September 22, 2015 2:01 PM
To: Akerman, Gregory; Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher
Subject: Glyphosate CARC Report

Hi

Hope you all received the CARC draft thru sharepoint.

Please make the edits on sharepoint so I can see the comments

Do NOT waste time on format, paginations, tabs etc. CPR is do the "document makeover"

Concentrate on the science

Make this as your priority and your "home pope work" on Wednesday

I would like to have your comments not later than COB Thursday

Thank you for all your work on this CARC

Regards

JR

Jess Rowland,

Deputy Director
Health Effects Division
703-308-2719

To: Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]
Cc: Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Liccione, John[Liccione.John@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/23/2015 3:28:34 PM
Subject: RE: Glyphosate CARC Report

I know both Jessica and Greg were having problems accessing the Sharepoint site, too. I downloaded the document and sent it to them via email.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
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From: Rowland, Jess
Sent: Tuesday, September 22, 2015 2:01 PM
To: Akerman, Gregory; Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher
Subject: Glyphosate CARC Report

Hi

Hope you all received the CARC draft thru sharepoint.

Please make the edits on sharepoint so I can see the comments

Do NOT waste time on format, paginations, tabs etc. CPR is do the "document makeover"

Concentrate on the science

Make this as your priority and your "home pope work" on Wednesday

I would like to have your comments not later than COB Thursday

Thank you for all your work on this CARC

Regards

JR

Jess Rowland,

Deputy Director
Health Effects Division
703-308-2719

To: Rowland, Jess[Rowland.Jess@epa.gov]
Cc: Brunsman, Lori[Brunsman.Lori@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Liccione, John[Liccione.John@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]
From: Middleton, Karlyn
Sent: Wed 9/23/2015 3:26:51 PM
Subject: RE: Glyphosate CARC Report

Hi all,

For some reason, I can't upload my comments to share point. It says that its locked for editing for me. Did this happen to anyone else?

From: Rowland, Jess
Sent: Tuesday, September 22, 2015 2:01 PM
To: Akerman, Gregory; Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher
Subject: Glyphosate CARC Report

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Regards

JR

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Deputy Director
Health Effects Division
703-308-2719

To: Akerman, Gregory[Akerman.Gregory@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]
From: Rowland, Jess
Sent: Tue 9/22/2015 6:01:09 PM
Subject: Glyphosate CARC Report

Hi

Hope you all received the CARC draft thru sharepoint.

Please make the edits on sharepoint so I can see the comments

Do NOT waste time on format, paginations, tabs etc. CPR is do the "document makeover"

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Regards

JR

Jess Rowland,

Deputy Director
Health Effects Division
703-308-2719

To: Akerman, Gregory[Akerman.Gregory@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; May, Brenda[May.Brenda@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Woo, Yintak[Woo.Yintak@epa.gov]
Cc: Rowland, Jess[Rowland.Jess@epa.gov]
From: Rowland, Jess
Sent: Tue 9/22/2015 5:43:19 PM
Subject: Rowland, Jess has shared 'Glyphosate CARC Final 9.21.15'

Here's the document that Rowland, Jess shared with you.

Open Glyphosate CARC Final 9.21.15.docx

Followthis document to get updates in your newsfeed.

To: Chen, Jonathan[Chen.Jonathan@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/16/2015 11:07:31 AM
Subject: RE: Glyphosate CARC Package

You're welcome!

Just 6 more emails with attachments headed your way this morning!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Chen, Jonathan
Sent: Tuesday, September 15, 2015 3:45 PM
To: Brunsman, Lori
Subject: RE: Glyphosate CARC Package

Thank you.

Jonathan Chen

From: Brunsman, Lori
Sent: Tuesday, September 15, 2015 3:04 PM
To: Chen, Jonathan
Subject: RE: Glyphosate CARC Package

Jonathan –

There are a TON of documents. I will at least get the CARC package to you this afternoon and the rest of the documents to you tomorrow morning before the meeting.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Chen, Jonathan
Sent: Tuesday, September 15, 2015 2:55 PM
To: Brunsman, Lori
Subject: FW: Glyphosate CARC Package

Dear Lori:

Can you send me the documents? I cannot access the CARC packages from Lotus Note.

Jonathan Chen

From: Brunsman, Lori
Sent: Wednesday, September 09, 2015 1:58 PM
To: Akerman, Gregory; Brunsman, Lori; Chen, Jonathan; Dunbar, Anwar; Kent, Ray; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Middleton, Karlyn; OPP HED Notes Coordinators; Rowland, Jess; Shah, Pv; Woo, Yintak; Wood, Charles; Lobdell, Danelle; Morton, Thurston; Smith, Charles
Subject: Glyphosate CARC Package

The Glyphosate CARC package is now on the Lotus Notes database.

Please let me know if you cannot access it and I will email you the documents.

REMINDER: the Glyphosate CARC meeting is an **ALL-DAY** meeting (9:00 am to 4:00 pm) next **Wednesday, September 16, 2015**, in room S-10100.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Akerman, Gregory[Akerman.Gregory@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Liccione, John[Liccione.John@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; OPP HED Notes Coordinators[OPP_HED_Notes_Coordinators@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]; Woo, Yintak[Woo.Yintak@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Morton, Thurston[Morton.Thurston@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/9/2015 5:58:01 PM
Subject: Glyphosate CARC Package

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Please let me know if you cannot access it and I will email you the documents.

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Lori

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703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Liccione, John
Sent: Tue 5/26/2015 1:52:30 PM
Subject: RE: Glyphosate CARC Meeting

July 8th works good for me too….unless a grizzley bear or bison gets me in yellowstone in june. Had some close calls before.

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Middleton, Karlyn
Sent: Tue 5/26/2015 1:42:44 PM
Subject: RE: Glyphosate CARC Meeting

The 8th is good for me.

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

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Thanks!

Have a great day!

Lori

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To: OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Brunsman, Lori
Sent: Tue 5/26/2015 1:25:29 PM
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Chen, Jonathan
Sent: Tue 9/15/2015 7:45:18 PM
Subject: RE: Glyphosate CARC Package

Thank you.

Jonathan Chen

From: Brunsman, Lori
Sent: Tuesday, September 15, 2015 3:04 PM
To: Chen, Jonathan
Subject: RE: Glyphosate CARC Package

Jonathan –

There are a TON of documents. I will at least get the CARC package to you this afternoon and the rest of the documents to you tomorrow morning before the meeting.

Have a great day!

Lori

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703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

From: Chen, Jonathan
Sent: Tuesday, September 15, 2015 2:55 PM
To: Brunsman, Lori
Subject: FW: Glyphosate CARC Package

Dear Lori:

Can you send me the documents? I cannot access the CARC packages from Lotus Note.

Jonathan Chen

From: Brunsman, Lori
Sent: Wednesday, September 09, 2015 1:58 PM
To: Akerman, Gregory; Brunsman, Lori; Chen, Jonathan; Dunbar, Anwar; Kent, Ray; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Middleton, Karlyn; OPP HED Notes Coordinators; Rowland, Jess; Shah, Pv; Woo, Yintak; Wood, Charles; Lobdell, Danelle; Morton, Thurston; Smith, Charles
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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Chen, Jonathan
Sent: Tue 5/26/2015 1:55:50 PM
Subject: RE: Glyphosate CARC Meeting

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Jonathan Chen

Jonathan Chen

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

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Lori

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Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

From: Rowland, Jess
Required Attendees: akerman.gregory@epa.gov; Lori Brunsman; Chen, Jonathan; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Shah, Pv; Kent, Ray; Lobdell, Danelle; Woo, Yintak; Wood, Charles; Morton, Thurston
Location: 10621
Importance: Normal
Subject: Glyphosate - CARC - Continues.....
Start Date/Time: Wed 9/16/2015 5:00:00 PM
End Date/Time: Wed 9/16/2015 8:00:00 PM

Given the volume of data we have to review, I have scheduled this PM session.
This CARC should be a priority for you. So keep this day OPEN
Please adjust your other commitments for the day

From: Rowland, Jess
Required Attendees: akerman.gregory@epa.gov; Lori Brunsman; Chen, Jonathan; Kent, Ray; Kidwell, Jessica; Liccione, John; Lobdell, Danelle; Middleton, Karlyn; Shah, Pv; Woo, Yintak; Wood, Charles; Morton, Thurston; Smith, Charles; McCarroll, Nancy; Dunbar, Anwar
Location: 10100
Importance: Normal
Subject: Glyphosate - CARC
Start Date/Time: Wed 9/16/2015 1:00:00 PM
End Date/Time: Wed 9/16/2015 4:00:00 PM

Greg et al.,

Please note the earlier start time
Make necessary changes to your schedule to accommodate this meeting.
You will receive the CARC package on September 2nd.
Thanks

JR

From: Christensen, Carol
Importance: Normal
Subject: GLYPHOSATE CARC Materials due today
Start Date/Time: Wed 6/10/2015 4:00:00 AM
End Date/Time: Thur 6/11/2015 4:00:00 AM

From: Brunsman, Lori
Required Attendees: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Optional Attendees: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: High
Subject: Canceled: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

NOTE: The Glyphosate CARC meeting has been rescheduled for July 8th.

From: Brunsman, Lori
Required Attendees: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Optional Attendees: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: High
Subject: Canceled: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

NOTE: The Glyphosate CARC meeting has been rescheduled for July 8th.

To: Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]
Cc: Lobdell, Danelle[Lobdell.Danelle@epa.gov]
From: Christensen, Carol
Sent: Tue 5/26/2015 5:37:19 PM
Subject: Glyphosate Cancer Epi CARC materials

Hi –

Please find glyphosate cancer epi CARC materials at: G:\Epidemiology Files_May2015\Glyphosate Epi for CARC. PDFs are included.

I have shared these materials with Dr. Lobdell, NHERRL.

Thanks and best of luck.

Carol

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Christensen, Carol
Sent: Tue 4/28/2015 5:30:47 PM
Subject: RE: Meeting Forward Notification: Glyphosate CARC Meeting

Yes, I was aware. I was asking a question as to whether he was interested in the epi side of the glyphosate cancer story. Carol

---

From: Brunsman, Lori
Sent: Tuesday, April 28, 2015 12:21 PM
To: Christensen, Carol
Subject: RE: Meeting Forward Notification: Glyphosate CARC Meeting

Carol -

In case you didn't know, Jess is co-chair of the CARC. He is automatically invited to every CARC meeting.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention
Environmental Protection Agency
One Potomac Yard S-10934
brunsman.lori@epa.gov
703-308-2902

-----Original Appointment-----
From: Microsoft Outlook **On Behalf Of** Christensen, Carol
Sent: Tuesday, April 28, 2015 11:27 AM
To: Brunsman, Lori
Subject: Meeting Forward Notification: Glyphosate CARC Meeting
When: Wednesday, June 24, 2015 2:30 PM-4:30 PM (UTC) Monrovia, Reykjavik.
Where: DCRoomPYS10100/Potomac-Yard-One

Your meeting was forwarded

Christensen, Carol has forwarded your meeting request to additional recipients.

Meeting
Glyphosate CARC Meeting

Meeting Time
Wednesday, June 24, 2015 10:30 AM-12:30 PM.

Recipients
Rowland, Jess
Miller, David
Smith, Charles

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2016

From: Christensen, Carol
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

To: Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]
Cc: Brunsman, Lori[Brunsman.Lori@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]
From: Liccione, John
Sent: Thur 9/24/2015 11:49:26 AM
Subject: RE: Glyphosate CARC Report

It happened to me too.

From: Middleton, Karlyn
Sent: Wednesday, September 23, 2015 11:27 AM
To: Rowland, Jess
Cc: Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher; Akerman, Gregory
Subject: RE: Glyphosate CARC Report

Hi all,

For some reason, I can't upload my comments to share point. It says that its locked for editing for me. Did this happen to anyone else?

From: Rowland, Jess
Sent: Tuesday, September 22, 2015 2:01 PM
To: Akerman, Gregory; Brunsman, Lori; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Chen, Jonathan; Kent, Ray; Schlosser, Christopher
Subject: Glyphosate CARC Report

Hi

Hope you all received the CARC draft thru sharepoint.

Please make the edits on sharepoint so I can see the comments

Do NOT waste time on format, paginations, tabs etc. CPR is do the "document makeover"

Concentrate on the science

Make this as your priority and your "home pope work" on Wednesday

I would like to have your comments not later than COB Thursday

Thank you for all your work on this CARC

Regards

JR

Jess Rowland,

Deputy Director
Health Effects Division
703-308-2719

To: Akerman, Gregory[Akerman.Gregory@epa.gov]; Brunsman, Lori[Brunsman.Lori@epa.gov]; Chen, Jonathan[Chen.Jonathan@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Kidwell, Jessica[kidwell.jessica@epa.gov]; Liccione, John[Liccione.John@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; OPP HED Notes Coordinators[OPP_HED_Notes_Coordinators@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]; Woo, Yintak[Woo.Yintak@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Morton, Thurston[Morton.Thurston@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]
From: Brunsman, Lori
Sent: Wed 9/9/2015 5:58:01 PM
Subject: Glyphosate CARC Package

The Glyphosate CARC package is now on the Lotus Notes database.

Please let me know if you cannot access it and I will email you the documents.

REMINDER: the Glyphosate CARC meeting is an **ALL-DAY** meeting (9:00 am to 4:00 pm) next **Wednesday, September 16, 2015**, in room S-10100.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

"When you have more than you need, build a longer table, not a higher fence."

To: OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Brunsman, Lori
Sent: Tue 5/26/2015 1:25:29 PM
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

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Office of Chemical Safety and Pollution Prevention

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One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

From: Rowland, Jess
Required Attendees: akerman.gregory@epa.gov; Lori Brunsman; Chen, Jonathan; Dunbar, Anwar; Kidwell, Jessica; Liccione, John; Middleton, Karlyn; McCarroll, Nancy; Shah, Pv; Kent, Ray; Lobdell, Danelle; Woo, Yintak; Wood, Charles; Morton, Thurston
Location: 10621
Importance: Normal
Subject: Glyphosate - CARC - Continues.....
Start Date/Time: Wed 9/16/2015 5:00:00 PM
End Date/Time: Wed 9/16/2015 8:00:00 PM

Given the volume of data we have to review, I have scheduled this PM session.
This CARC should be a priority for you. So keep this day OPEN
Please adjust your other commitments for the day

From: Rowland, Jess
Required Attendees: akerman.gregory@epa.gov; Lori Brunsman; Chen, Jonathan; Kent, Ray; Kidwell, Jessica; Liccione, John; Lobdell, Danelle; Middleton, Karlyn; Shah, Pv; Woo, Yintak; Wood, Charles; Morton, Thurston; Smith, Charles; McCarroll, Nancy; Dunbar, Anwar
Location: 10100
Importance: Normal
Subject: Glyphosate - CARC
Start Date/Time: Wed 9/16/2015 1:00:00 PM
End Date/Time: Wed 9/16/2015 4:00:00 PM

Greg et al.,

Please note the earlier start time
Make necessary changes to your schedule to accommodate this meeting.
You will receive the CARC package on September 2nd.
Thanks

JR

From: Brunsman, Lori
Required Attendees: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Optional Attendees: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: High
Subject: Canceled: Glyphosate CARC Meeting
Start Date/Time: Wed 7/8/2015 2:30:00 PM
End Date/Time: Wed 7/8/2015 4:30:00 PM

NOTE: The Glyphosate CARC meeting has been rescheduled for July 8th.

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Dunbar, Anwar
Sent: Tue 5/26/2015 1:54:45 PM
Subject: RE: Glyphosate CARC Meeting

That looks fine for me.

Anwar Y. Dunbar, Ph.D., Pharmacologist

Risk Assessment Branch 1

The Human Health Effects Division/ The Office of Pesticide Programs

1200 Pennsylvania Ave, NW

Washington, DC 20460

"Except for in the most unique of circumstances, mastery of any cognitively complex skill or task requires roughly 10,000 hours of practice"- Malcolm Gladwell, Author of the book Outliers

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

We are considering moving the CARC meeting on Glyphosate from June 24th to July 8th. Please let me know ASAP if you CANNOT make the July 8th meeting date.

Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

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703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
From: Liccione, John
Sent: Tue 5/26/2015 1:52:30 PM
Subject: RE: Glyphosate CARC Meeting

July 8th works good for me too….unless a grizzley bear or bison gets me in yellowstone in june. Had some close calls before.

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
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Thanks!

Have a great day!

Lori

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To: Brunsman, Lori[Brunsman.Lori@epa.gov]; OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
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From: Middleton, Karlyn
Sent: Tue 5/26/2015 1:42:44 PM
Subject: RE: Glyphosate CARC Meeting

The 8th is good for me.

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
Subject: Glyphosate CARC Meeting

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Thanks!

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs

Office of Chemical Safety and Pollution Prevention

Environmental Protection Agency
One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Lobdell, Danelle
Sent: Tue 5/26/2015 1:32:15 PM
Subject: RE: Glyphosate CARC Meeting

July 8th works for me.

Danelle T. Lobdell, Ph.D., M.S.

Epidemiologist

National Health and Environmental Effects Research Laboratory

Environmental Public Health Division

Mail:

USEPA

MD 58A

Research Triangle Park, NC 27711

Package Delivery:

USEPA Human Studies Facility

104 Mason Farm Rd, Room 52

Chapel Hill, NC 27514-4512

Phone: 919-843-4434 Fax: 919-966-7584

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
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Thanks!

Have a great day!

Lori

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One Potomac Yard S-10934

brunsman.lori@epa.gov
703-308-2902

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: McCarroll, Nancy
Sent: Tue 5/26/2015 1:31:49 PM
Subject: RE: Glyphosate CARC Meeting

Okay with me!

From: Brunsman, Lori
Sent: Tuesday, May 26, 2015 9:25 AM
To: OPP HED CARC; Christensen, Carol; Sarkar, Bayazid; Shah, Aruna; Tao, Jenny; Schlosser, Christopher; Miller, David; Lobdell, Danelle; Wood, Charles
Cc: Kidwell, Jessica; Kent, Ray; Liccione, John; Middleton, Karlyn; Rowland, Jess; McCarroll, Nancy; Akerman, Gregory; Smith, Charles; Dunbar, Anwar; Shah, Pv
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Lori

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To: OPP HED CARC[OPP_HED_CARC@epa.gov]; Christensen, Carol[Christensen.Carol@epa.gov]; Sarkar, Bayazid[Sarkar.Bayazid@epa.gov]; Shah, Aruna[Shah.Aruna@epa.gov]; Tao, Jenny[Tao.Jenny@epa.gov]; Schlosser, Christopher[Schlosser.Christopher@epa.gov]; Miller, David[Miller.DavidJ@epa.gov]; Lobdell, Danelle[Lobdell.Danelle@epa.gov]; Wood, Charles[Wood.Charles@epa.gov]
Cc: Kidwell, Jessica[kidwell.jessica@epa.gov]; Kent, Ray[Kent.Ray@epa.gov]; Liccione, John[Liccione.John@epa.gov]; Middleton, Karlyn[Middleton.Karlyn@epa.gov]; Rowland, Jess[Rowland.Jess@epa.gov]; McCarroll, Nancy[McCarroll.Nancy@epa.gov]; Akerman, Gregory[Akerman.Gregory@epa.gov]; Smith, Charles[Smith.Charles@epa.gov]; Dunbar, Anwar[Dunbar.Anwar@epa.gov]; Shah, Pv[Shah.Pv@epa.gov]
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Have a great day!

Lori

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brunsman.lori@epa.gov
703-308-2902

From: Shah, Pv
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Dunbar, Anwar
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

To: Brunsman, Lori[Brunsman.Lori@epa.gov]
From: Christensen, Carol
Sent: Tue 4/28/2015 5:30:47 PM
Subject: RE: Meeting Forward Notification: Glyphosate CARC Meeting

Yes, I was aware. I was asking a question as to whether he was interested in the epi side of the glyphosate cancer story. Carol

---

From: Brunsman, Lori
Sent: Tuesday, April 28, 2015 12:21 PM
To: Christensen, Carol
Subject: RE: Meeting Forward Notification: Glyphosate CARC Meeting

Carol -

In case you didn't know, Jess is co-chair of the CARC. He is automatically invited to every CARC meeting.

Have a great day!

Lori

****

Lori Brunsman, Statistician and Project Officer
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs
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Environmental Protection Agency
One Potomac Yard S-10934
brunsman.lori@epa.gov
703-308-2902

-----Original Appointment-----
From: Microsoft Outlook **On Behalf Of** Christensen, Carol
Sent: Tuesday, April 28, 2015 11:27 AM
To: Brunsman, Lori
Subject: Meeting Forward Notification: Glyphosate CARC Meeting
When: Wednesday, June 24, 2015 2:30 PM-4:30 PM (UTC) Monrovia, Reykjavik.
Where: DCRoomPYS10100/Potomac-Yard-One

Your meeting was forwarded

Christensen, Carol has forwarded your meeting request to additional recipients.

Meeting
Glyphosate CARC Meeting

Meeting Time
Wednesday, June 24, 2015 10:30 AM-12:30 PM.

Recipients
Rowland, Jess
Miller, David
Smith, Charles

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2016

From: Microsoft Outlook
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Meeting Forward Notification: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

Your meeting was forwarded

Christensen, Carol has forwarded your meeting request to additional recipients.

Meeting

Glyphosate CARC Meeting

Meeting Time

Wednesday, June 24, 2015 10:30 AM-12:30 PM.

Recipients

Rowland, Jess
Miller, David
Smith, Charles

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2016

From: Akerman, Gregory
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: McCarroll, Nancy
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Christensen, Carol
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Rowland, Jess
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Middleton, Karlyn
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Miller, David
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Liccione, John
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Declined: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

I will be in jellystone

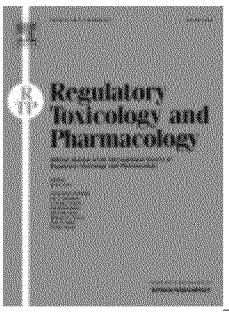
From: Kent, Ray
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: Wood, Charles
Location: DCRoomPYS10100/Potomac-Yard-One
Importance: Normal
Subject: Accepted: Glyphosate CARC Meeting
Start Date/Time: Wed 6/24/2015 2:30:00 PM
End Date/Time: Wed 6/24/2015 4:30:00 PM

From: "Saved by Internet Explorer 11"
Subject: Epidemiologic studies of glyphosate and non-cancer health outcomes: A review
Attachment
Attachment
Attachment
Attachment
Attachment
Attachment
Attachment
Attachment
Attachment

Regulatory Toxicology and Pharmacology

Volume 61, Issue 2, November 2011, Pages 172–184



Epidemiologic studies of glyphosate and non-cancer health outcomes: A review

- Pamela J. Mink[a, b, ,]
- Jack S. Mandel[c],
- Jessica I. Lundin[d],
- Bonnielin K. Sceurman[b, 1]

- [a] Department of Epidemiology, Rollins School of Public Health, Emory University, 1518 Clifton Road, Atlanta, GA 30322, USA
- [b] Exponent Health Sciences Practice, 1150 Connecticut Ave., Suite 1100, Washington, DC 20036, USA
- [c] Exponent Inc., 149 Commonwealth Drive, Menlo Park, CA 94025, USA
- [d] Exponent Health Sciences Practice, 15375 Southeast 30th Place, Bellevue, WA 98007, USA

Received 7 March 2011, Available online 21 July 2011

Abstract

The United States (US) Environmental Protection Agency (EPA) and other regulatory agencies around the world have registered glyphosate as a broad-spectrum herbicide for use on multiple food and non-food use crops. To examine potential health risks in humans, we searched and reviewed the literature to evaluate whether exposure to glyphosate is associated causally with non-cancer health risks in humans. We also reviewed biomonitoring studies of glyphosate to allow for a more comprehensive discussion of issues related to exposure assessment and

misclassification. Cohort, case–control and cross-sectional studies on glyphosate and non-cancer outcomes evaluated a variety of endpoints, including non-cancer respiratory conditions, diabetes, myocardial infarction, reproductive and developmental outcomes, rheumatoid arthritis, thyroid disease, and Parkinson's disease. Our review found no evidence of a consistent pattern of positive associations indicating a causal relationship between any disease and exposure to glyphosate. Most reported associations were weak and not significantly different from 1.0. Because accurate exposure measurement is crucial for valid results, it is recommended that pesticide-specific exposure algorithms be developed and validated.

Highlights

► We reviewed epidemiologic studies of glyphosate and non-cancer human health risks. ► Endpoints included respiratory, cardiovascular, neurologic, and reproductive outcomes. ► Most reported associations were weak and not significantly different from 1.0. ► Accurate exposure measurement is crucial for obtaining valid study results.

Abbreviations

- ADD/ADHD, attention deficit disorder/attention deficit hyperactivity disorder;
- AHS, Agricultural Health Study;
- CAS, Chemical Abstract Service;
- CFR, conditional fecundity ratio;
- CI, confidence interval;
- FFES, Farm Family Exposure Study;
- NTD, neural tube defect;
- OR, odds ratio;
- PD, Parkinson's disease;
- RA, rheumatoid arthritis;
- RR, relative risk;
- US EPA, United States Environmental Protection Agency

Keywords

- Glyphosate;
- Herbicides;
- Epidemiology;
- Respiratory health;
- Reproductive health;
- Chronic disease

1. Introduction

Glyphosate (*N*-phosphonomethyl glycine) is the primary active ingredient in Roundup branded herbicides produced by the Monsanto Company. The United States (US) Environmental Protection Agency (EPA) and other regulatory agencies around the world have registered this chemical as a broad-spectrum herbicide for use on multiple food and non-food use crops. Glyphosate-based herbicides have been sold in the US since 1974 and marketed under the brand names Roundup®, Roundup Pro®, Roundup PowerMAX™, Roundup WeatherMAX® and AquaMaster®. Glyphosate-based herbicides are now registered in over 130 countries to control annual and perennial weeds, woody brush and trees in agricultural, industrial, forestry, greenhouse, rights-of-way, and residential areas. In the US, glyphosate (isopropylamine salt) herbicides were applied to 31% of all planted corn acres in 2005 (USDA, 2006) and 92% of all planted soybean acres in 2006 (USDA, 2007).

A weight of evidence analysis of glyphosate and Roundup® concluded that they were neither genotoxic nor mutagenic as a result of direct reaction with DNA (Williams et al., 2000). In addition, in multigeneration reproduction and developmental toxicity studies in rats, no adverse effects were observed on the animals' ability to mate, conceive, carry or deliver normal offspring. The US EPA concluded that there is a reasonable certainty that no harm will result to the general population or to infants and children from aggregate exposure to glyphosate residues (US EPA, 2007). No evidence of neurotoxicity was observed in any study conducted including specialized neurotoxicity studies (WHO/FAO, 2004).

We reviewed epidemiologic studies of glyphosate and non-cancer health risks to evaluate whether exposure to glyphosate is associated causally with health risks in humans. We follow the presentation of results with a discussion of interpretation issues, including exposure assessment considerations, as they relate to findings from the observational epidemiologic studies. We did not consider it appropriate to calculate quantitative summary relative risk estimates across studies evaluating many different health outcomes ranging from reproductive outcomes to respiratory symptoms and conditions to myocardial infarctions. Throughout this review, the term "glyphosate" is used to refer to glyphosate-containing herbicides and not necessarily to the specific chemical itself.

2. Methods

Studies were included in our review if they met the following criteria: (1) published in a peer-reviewed journal; (2) English language; (3) analytic epidemiologic studies (e.g., cohort, case–control, cross-sectional) that evaluated the association between glyphosate and a non-cancer outcome(s). Analyses of more general categories of "pesticides" or "herbicides" did not meet our criteria. Studies of poisonings or other acute effects of glyphosate were not included.

Multiple search strategies were employed to identify literature related to glyphosate exposure and human cancer outcomes. A PubMed search was conducted using the term "glyphosate," as well as its synonyms, chemical name, and Chemical Abstract Service (CAS) number, in conjunction with various terms related to epidemiology studies (e.g., "cohort," "case–control"). In addition, broader searches for articles regarding epidemiologic studies of organophosphorus compounds used as pesticides or herbicides were conducted, as well as a search for case–control

studies of pesticides or herbicides.

A separate search was conducted using the STN search service index, which searches multiple databases simultaneously, including Biosis, EMBASE, Medline, Pascal, and SciSearch. The CAS registry number for glyphosate was searched in combination with epidemiologic terms. After duplicates were removed, abstracts were reviewed to determine if they met the inclusion criteria. Articles meeting the inclusion criteria were then obtained and reviewed. For completeness, we examined the reference sections of the primary epidemiology and biomonitoring publications for additional articles that may not have been identified by the PubMed searches.

3. Results

Although associations between glyphosate and non-cancer outcomes were examined in study cohorts, including the Agricultural Health Study (AHS) cohort, many analyses were based on cross-sectional data and/or prevalent cases (e.g., baseline questionnaire). Studies and results reported under the heading "cohort studies" were limited to analyses of incident cases. The study of pesticides and Parkinson's disease (PD) by Kamel et al. (2007) analyzed both baseline prevalence data as well as incident PD cases identified during the 1999–2003 follow-up. For simplicity, we reported both the prevalence and incidence findings from this study in the cohort studies section. In addition, one nested case–control study of rheumatoid arthritis (RA) was conducted in the AHS, and is described in the case–control studies section rather than the cohort studies section because it used prevalent rather than incident RA cases. Brief descriptions of each cohort, case–control and cross-sectional study are presented in Tables 1–3, respectively.

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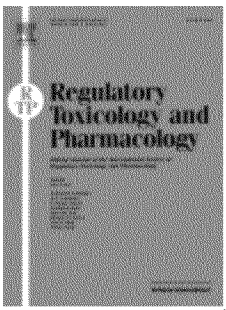

Epidemiologic studies of glyphosate and cancer: A review

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Abstract

The United States Environmental Protection Agency and other regulatory agencies around the world have registered glyphosate as a broad-spectrum herbicide for use on multiple food and non-food use crops. Glyphosate is widely considered by regulatory authorities and scientific bodies to have no carcinogenic potential, based primarily on results of carcinogenicity studies of rats and mice. To examine potential cancer risks in humans, we reviewed the epidemiologic literature to evaluate whether exposure to glyphosate is associated causally with cancer risk in humans. We also reviewed relevant methodological and biomonitoring studies of glyphosate. Seven cohort studies and fourteen case-control studies examined the association between glyphosate and one

or more cancer outcomes. Our review found no consistent pattern of positive associations indicating a causal relationship between total cancer (in adults or children) or any site-specific cancer and exposure to glyphosate. Data from biomonitoring studies underscore the importance of exposure assessment in epidemiologic studies, and indicate that studies should incorporate not only duration and frequency of pesticide use, but also type of pesticide formulation. Because generic exposure assessments likely lead to exposure misclassification, it is recommended that exposure algorithms be validated with biomonitoring data.

Highlights

► We reviewed epidemiologic studies of glyphosate and cancer outcomes. ► We identified seven cohort studies and fourteen case-control studies. ► Our review found no consistent pattern of positive associations with any cancer. ► We recommend that exposure algorithms be validated with biomonitoring data.

Abbreviations

- AHS, Agricultural Health Study;
- CAS, Chemical Abstract Service;
- CI, confidence interval;
- FFES, Farm Family Exposure Study;
- HCL, hairy cell leukemia;
- IARC, International Agency for Research on Cancer;
- MGUS, monoclonal gammopathy of undetermined significance;
- NHL, non-Hodgkin lymphoma;
- OR, odds ratio;
- RR, relative risk;
- SLL/CLL, small lymphocytic lymphoma/chronic lymphocytic leukemia;
- US EPA, United States Environmental Protection Agency

Keywords

- Cancer;
- Glyphosate;
- Herbicides;
- Epidemiology

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1. Introduction

Glyphosate(N-phosphonomethyl glycine; CAS registry #38641-94-0) is the primary active ingredient in Roundup-branded herbicides produced by the Monsanto Company. The United

States (US) Environmental Protection Agency (EPA) and other regulatory agencies around the world have registered this chemical as a broad-spectrum herbicide for use on multiple food and non-food use crops. Glyphosate-based herbicides, which have been sold in the US since 1974 and marketed under the brand names Roundup®, Roundup Pro®, Roundup PowerMAX™, Roundup WeatherMAX®, and AquaMaster®, are now registered in over 130 countries to control annual and perennial weeds, woody brush, and trees in agricultural, industrial, forestry, greenhouse, rights-of-way and residential areas. Other brands and manufacturers of glyphosate products include but are not limited to Glyfos® (Cheminova), Durango® DMA® (Dow AgroSciences), and Touchdown HiTech® (Syngenta). In the US, glyphosate (isopropylamine salt) herbicides were applied to 31% of all planted corn acres in 2005 (USDA, 2006) and 92% of all planted soybean acres in 2006 (USDA, 2007).

Glyphosate is widely considered by regulatory authorities and scientific bodies to have no carcinogenic potential (EC, 2002, US EPA, 1993 and WHO/FAO, 2004). US EPA has classified glyphosate as a Group E carcinogen, which is defined as having "evidence of non-carcinogenicity for humans" (US EPA, 1993). This classification was based on "a lack of convincing evidence of carcinogenicity in adequate studies with two animal species, rat and mouse" (US EPA, 1993). Negative results were observed in genotoxicity studies conducted under good laboratory practice conditions and compliant with current regulatory test guidelines (Williams et al., 2000). It was concluded that, in the absence of carcinogenic potential in animals and given the lack of genotoxicity in standard tests, glyphosate is unlikely to pose a carcinogenic risk to humans (WHO/FAO, 2004 and Williams et al., 2000). In addition, US EPA has concluded that there is a reasonable certainty that no harm will result to the general population or to infants and children from aggregate exposure to residues of glyphosate (US EPA, 2007). Nevertheless, there has been no published comprehensive review of the epidemiologic research on this topic.

We reviewed epidemiologic cohort and case-control studies of glyphosate and cancer to evaluate whether exposure to glyphosate is associated causally with risk of developing cancer in humans. In addition, we reviewed methodological and biomonitoring studies of glyphosate to allow for a more comprehensive discussion of issues related to exposure assessment (including exposure misclassification and information bias) and other interpretation issues as they relate to findings from the epidemiologic studies. We did not consider it appropriate to calculate quantitative summary relative risk estimates across studies evaluating different site-specific cancers (e.g., breast cancer, brain cancer, esophageal cancer, etc.), and therefore did not conduct a meta-analysis.

2. Methods

Studies were included in our review if they met the following criteria: (1) published in a peer-reviewed journal; (2) English language; (3) analytic epidemiologic studies (e.g., cohort, case-control) that evaluated the association between glyphosate and a cancer outcome(s). Analyses of more general categories of "pesticides" or "herbicides" did not meet our criteria. Studies of poisonings or other acute effects of glyphosate were not included.

Multiple search strategies were employed to identify literature related to glyphosate exposure

and human cancer outcomes. A PubMed search was conducted using the term "glyphosate," as well as its synonyms, chemical name, and Chemical Abstract Service (CAS) number, in conjunction with various terms related to epidemiology studies (e.g., "cohort," "case-control"). In addition, broader searches for articles regarding epidemiologic studies of organophosphorus compounds used as pesticides or herbicides were conducted, as well as a search for case-control studies of pesticides or herbicides.

A separate search was conducted using the STN search service index, which searches multiple databases simultaneously, including Biosis, EMBASE, Medline, Pascal, and SciSearch. The CAS registry number for glyphosate was searched in combination with epidemiologic terms.

After duplicates were removed, abstracts were reviewed to determine if they met the inclusion criteria. Articles meeting the inclusion criteria were then obtained and reviewed.

Literature searches to identify biomonitoring studies of glyphosate were also performed using PubMed. We searched on the terms "glyphosate" and "Round up OR Roundup" in separate searches. Both searches also included the term "biomonitoring" as well as related terms including "sample," "urine," and "blood." Abstracts identified from these searches were reviewed. For all articles of interest, the "related articles" identified by PubMed were also reviewed. All relevant articles were obtained.

For completeness, we examined the reference sections of the primary epidemiology and biomonitoring publications for additional articles that may not have been identified by the PubMed searches.

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Safety Evaluation and Risk Assessment of the Herbicide Roundup[1] and Its Active Ingredient, Glyphosate, for Humans

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Reviews on the safety of glyphosate and Roundup herbicide that have been conducted by several regulatory agencies and scienti®c institutions worldwide have concluded that there is no indication of any human health concern. Nevertheless, questions regarding their safety are periodically raised. This review was undertaken to produce a current and comprehensive safety evaluation and risk assessment for humans. It includes assessments of glyphosate, its major breakdown product [aminomethylphosphonic acid (AMPA)], its Roundup formulations, and the predominant surfactant [polyethoxylated tallow amine (POEA)] used in Roundup formulations worldwide. The studies evaluated in this review included those performed for regulatory purposes as well as published research reports. The oral absorption of glyphosate and AMPA is low, and both materials are eliminated essentially unmetabolized. Dermal penetration studies with Roundup showed very low absorption. Experimental evidence has shown that neither glyphosate nor AMPA bioaccumulates in any animal tissue. No signi®cant toxicity occurred in acute, subchronic, and chronic studies. Direct ocular exposure to the concentrated Roundup formulation can result in transient irritation, while normal spray dilutions cause, at most, only minimal effects. The genotoxicity data for glyphosate and Roundup were assessed using a weight-of-evidence approach and standard evaluation criteria. There was no convincing evidence for direct DNA damage *in vitro* or *in vivo,* and it was concluded that Roundup and its components do not pose a risk for the production of heritable/somatic mutations in humans. Multiple lifetime feeding studies have failed to demonstrate any tumorigenic potential for glyphosate. Accordingly, it was concluded that glyphosate is noncarcinogenic. Glyphosate, AMPA, and POEA were not teratogenic or developmentally toxic. There were no effects on fertility or reproductive parameters in two multigeneration reproduction studies with glyphosate. Likewise there were no adverse effects in reproductive tissues from animals treated with glyphosate, AMPA, or POEA in chronic and/or subchronic studies. Results from standard studies with these materials also failed to show any effects indicative of endocrine modulation. Therefore, it is concluded that the use of Roundup herbicide does not result in adverse effects on development, reproduction, or endocrine systems in humans and other mammals. For purposes of risk assessment, no-observed-adverse-effect levels (NOAELs) were identi®ed for all subchronic, chronic, developmental, and reproduction studies with glyphosate, AMPA, and POEA. Margins-of-exposure for chronic risk were calculated for each compound by dividing the lowest applicable NOAEL by worst-case estimates of chronic exposure. Acute risks were assessed by comparison of oral LD_{50} values to estimated maximum acute human exposure. It was concluded that, under present and expected conditions of use, Roundup herbicide does not pose a health risk to humans. © 2000 Academic Press

Key Words: glyphosate; Roundup; herbicide; human exposure; risk assessment.

INTRODUCTION

History of Glyphosate and General Weed Control Properties

The herbicidal properties of glyphosate were discovered by Monsanto Company scientists in 1970. Glyphosate (Fig. 1) is a nonselective herbicide that inhibits plant growth through interference with the production of essential aromatic amino acids by inhibition of the enzyme enolpyruvylshikimate phosphate synthase, which is responsible for the biosynthesis of chorismate, an intermediate in phenylalanine, tyrosine, and tryptophan biosynthesis (Fig. 2). This pathway for biosynthesis of aromatic amino acids is not shared by members of the animal kingdom, making blockage of this pathway an effective inhibitor of amino acid biosynthesis exclusive to plants. Glyphosate expresses its herbi-

[1] Roundup is a registered trademark of Monsanto.

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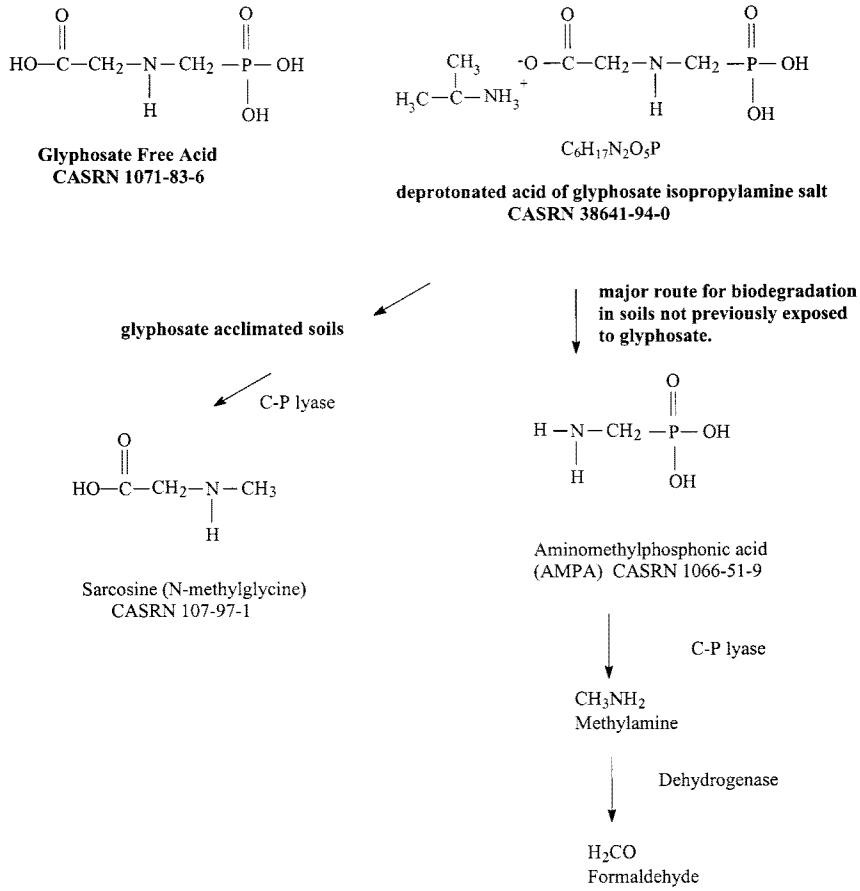

FIG. 1. A simpli®ed pathway for degradation of glyphosate in the terrestrial environment. (Adapted from R. Wiersema, M. Burns, and D. Hershberger (Ellis *et al.*, 1999).)

cidal action most effectively through direct contact with foliage and subsequent translocation throughout the plant. Entry via the root system is negligible in terrestrial plants. For example, glyphosate applications will eliminate weeds around fruit trees in an orchard without harming the trees, provided that the leaves of the tree are not exposed. Glyphosate is predominantly degraded in the environment by microorganisms and through some limited metabolism in plants (Fig. 1); glyphosate ultimately breaks down to innocuous natural substances such as carbon dioxide and phosphonic acid.

Roundup herbicide, which contains glyphosate as the active ingredient, was ®rst introduced in 1974 for nonselective weed control (Franz *et al.*, 1997). During the past 25 years of commercial use, growers, agricultural researchers, and commercial applicators, working in conjunction with Monsanto Company, have expanded the uses of Roundup. These uses have largely focused on inhibiting the growth of unwanted annual and perennial weeds, as well as woody brush and trees in agricultural, industrial, forestry, and residential weed control settings. Glyphosate-based products have been increasingly used by farmers in ®eld preparation prior to planting and in no-till soil conservation programs. The use of glyphosate in agriculture continues to expand particularly in applications involving plant varieties that are genetically modi®ed to tolerate glyphosate treatment (Roundup-Ready[3]). Today, a variety of glyphosate-based formulations such as Roundup are registered in more than 100 countries and are available under different brand names. Although patents for this product held by Monsanto Company have expired in many countries, Monsanto continues to be the major commercial supplier of glyphosate and its formulations, worldwide.

Purpose and Scope

Glyphosate and Roundup herbicide have been extensively investigated for the potential to produce adverse health effects in humans. Government regulatory agencies in several countries, international organizations, and other scienti®c institutions and experts have reviewed the available scienti®c data and independently judged the safety of glyphosate and Roundup.

[3] Roundup-Ready is a registered trademark of Monsanto.

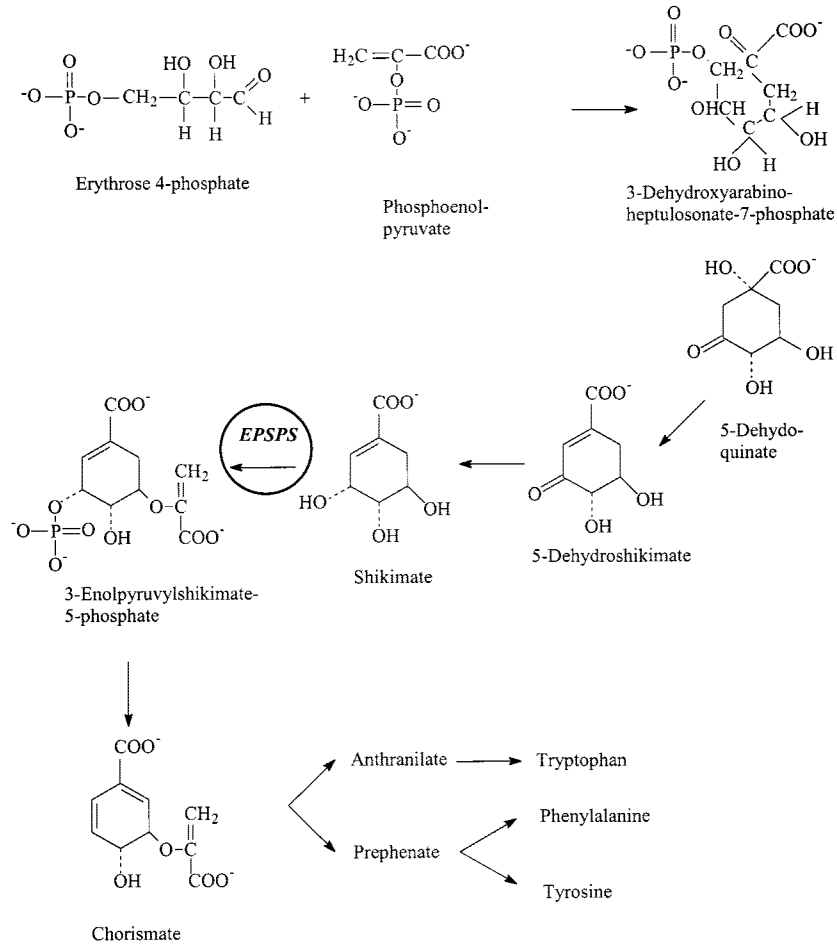

FIG. 2. Mechanism of action for glyphosate in plants. Glyphosate inhibits synthesis of essential aromatic amino acids by competitive inhibition of the enzyme enolpyruvylshikimate phosphate synthase (EPSPS).

Conclusions from three major health organizations [Health Canada, United States Environmental Protection Agency (U.S. EPA), and World Health Organization (WHO)] are publicly available (Health and Welfare Canada, 1986, 1992; U.S. EPA, 1993, 1997a, 1998a; WHO, 1994a). Those reviews, which have applied internationally accepted methods, principles, and procedures in toxicology, have discovered no grounds to suggest concern for human health. Data on Roundup and glyphosate are constantly reevaluated by regulatory agencies in a science-based process for many reasons including its volume of production and new uses. Nevertheless, questions regarding its safety are periodically raised.

The purpose of this review is to critically assess the current information pertaining to the safety of glyphosate and Roundup and to produce a comprehensive safety evaluation and risk assessment for humans. Certain sectors of the scienti®c and nonscienti®c communities have commented on the safety and bene®ts of pesticide use. With this in mind, parts of this assessment address speci®c concerns that have been raised by special interest groups. This review will focus on technical glyphosate acid; its major breakdown product aminomethylphosphonic acid (AMPA);[4] its Roundup formulations; and the polyethoxylated tallow amine surfactant (POEA), which is the predominant surfactant used in Roundup formulations worldwide. The review will evaluate data relating to toxicity based on exposure to Roundup and its components. The sources of information used in this review include studies conducted by Monsanto and published research reports dealing with glyphosate, AMPA, POEA and Roundup. The scienti®c studies conducted by Monsanto were reper-

[4] Abbreviations used: 8-OhdG, 8-hydroxylguanine; AMPA, aminomethylphosphonic acid; AUC, area under the curve; GLP, Good Laboratory Practices; IPA, isopropylamine; MCL, maximum contaminant level; MNPCE, micronucleated PCE; MOE, margin of exposure; MOS, margin of safety; MRL, maximum residue levels; NCEs, normochromatic erythrocytes; NOAEL, no-observed-adverse-effect levels; NOEC, no-observed-effect concentration; PCEs, polychromatic erythrocytes; POEA, polyethoxylated tallow amine; SCE, sister chromatid exchange assay; SSB, single-strand breaks; TMDI, theoretical maximum daily intake; UDS, unscheduled DNA synthesis.

formed for regulatory purposes and, thus, comply with accepted protocols and Good Laboratory Practices (GLP), according to standards of study conduct in effect at the time. Published research reports available in the general scientific literature range in quality from well-conducted investigations to those containing serious scientific deficiencies. Other sources of information, primarily reviews from regulatory agencies and international organizations, have also been used to develop this risk assessment. In this effort, the authors have had the cooperation of Monsanto Company that has provided complete access to its database of studies and other documentation. Glyphosate-based products are currently manufactured by a variety of companies worldwide. Some sources of information, including studies produced by manufacturers of glyphosate-based products other than Monsanto, are not generally available and as such were not considered for this risk assessment. Data for such products are proprietary and not readily available and therefore were not evaluated for inclusion in this risk assessment.

PRINCIPLES OF THE RISK ASSESSMENT PROCESS

The risk assessment process involves the characterization of toxicities and estimation of possible adverse outcomes from specific chemical exposures (CCME, 1996; Environment Canada, 1997; NRC, 1983; U.S. EPA, 1995, 1997a). The NRC (1983) and U.S. EPA Draft Cancer Risk Assessment Guidelines (1996) define risk characterization as the step in the risk assessment process that integrates hazard identification, dose–response assessment, and exposure assessment, using a combination of qualitative and quantitative information. Risk assessment can provide a comprehensive estimate of the potential effect in specific, well-defined, and described circumstances.

Hazard identification assesses the capacity of an environmental agent to cause adverse effects in experimental systems or humans. This is a qualitative description based on several factors such as availability of human data, data from laboratory animals, and any ancillary information (e.g., structure–activity analysis, genetic toxicity, pharmacokinetics) from other studies. Finally, a weight-of-evidence is prepared based on data accumulated from many sources, where a mode of action is suggested, responses in experimental animals are evaluated, and the relevance of these to human outcomes is discussed (U.S. EPA, 1995).

The determination of hazard is often dependent on whether a dose–response relationship is available (U.S. EPA, 1991). Hazard identification for developmental toxicity and other noncancer health effects is usually done in conjunction with an evaluation of dose–response relationships. The dose–response assessment evaluates what is known about the biological mode of action of a chemical and assesses the dose–response relationships on any effects observed in the laboratory. At this stage, the assessment examines quantitative relationships between exposure (or the dosage) and effects in the studies used to identify and define effects of concern.

The exposure assessment addresses the known principal paths, patterns, and magnitudes of human exposure and numbers of persons who may be exposed to the chemical in question. This step examines a wide range of exposure parameters including the scenarios involving human exposure in the natural environment. Monitoring studies of chemical concentrations in environmental media, food, and other materials offer key information for developing accurate measures of exposure. In addition, modeling of environmental fate and transport of contaminants as well as information on different activity patterns of different population subgroups can produce more realistic estimates for potential exposures. Values and input parameters used for exposure scenarios should be defensible and based on data. Any assumptions should be qualified as to source and general logic used in their development (e.g., program guidance, analogy, and professional judgment). The assessment should also address factors (e.g., concentration, body uptake, duration/frequency of exposure) most likely to account for the greatest uncertainty in the exposure estimate, due either to sensitivity or to lack of data.

A fundamental requirement for risk characterization for humans is the need to address variability. Populations are heterogeneous, so heterogeneity of response to similar exposures must also be considered. Assessments should discuss the dosage received by members of the target population, but should retain a link to the general population, since individual exposure, dosage, and risk can vary widely in a large population.

In addition to variability, uncertainty arises from a lack of knowledge about factors that drive the events responsible for adverse effects. Risk analysis is characterized by several categories of uncertainty including measurement uncertainty, uncertainties associated with modeled values, and uncertainties that arise from a simple lack of knowledge or data gaps. Measurement uncertainty refers to the usual error that accompanies scientific measurements as expected from statistical analysis of environmental sampling and monitoring. The assumptions of scientific models for dose–response or models of environmental fate and transport also have some uncertainty. Finally, in the absence of data, the risk assessor should include a statement of confidence that estimates or assumptions made in model development adequately fill the data gap.

Chemical Characterization and Technical Aspects of Roundup Formulations Addressed in This Review

Glyphosate is an amphoteric compound with several pK_a values. The high polarity of the glyphosate mole-

cule makes it practically insoluble in organic solvents. Glyphosate is formulated in Roundup as its isopropylamine (IPA) salt. Roundup is supplied as both dry and aqueous formulations at various concentrations; it is commonly formulated with water at 2.13 M (356 g/L free acid or 480 g/L IPA salt) with a surfactant added to aid in penetration of plant surfaces, thereby improving its effectiveness.

Technical-grade glyphosate acid manufactured by Monsanto Company averages 96% purity on a dry-weight basis. The remaining components are by-products of synthesis, whose individual concentrations are below 1%. This impurity pro®le has been identi®ed and quanti®ed during the development of the detailed manufacturing process. This information has been provided to and evaluated by a number of government authorities as part of the information supporting regulatory approval of Monsanto-produced glyphosate. All manufacturers of glyphosate-containing herbicides must meet similar regulatory requirements. This technical-grade glyphosate was used as the test material in the extensive toxicological testing discussed in this assessment. The identity of the impurities in technical-grade glyphosate has remained relatively unchanged over the course of the toxicological testing of the product described in the reports reviewed here. The ®ndings of those studies, therefore, include any effects that could result from the impurities and are therefore embodied in the resulting hazard characterization and risk assessment.

Glyphosate acid is usually formulated with the organic base IPA to yield a more water-soluble salt. This salt, combined with water and a surfactant to improve performance in the ®eld, comprise the principal glyphosate formulations sold worldwide under the Roundup family of brand names. The predominant surfactant used in Roundup products worldwide is a POEA, which is a mixture of polyethoxylated long-chain alkylamines synthesized from animal-derived fatty acids. This is the only surfactant considered in any detail in this review. Language considerations and differing business needs have resulted in the marketing of this formulation in some countries using a variety of other brand names (such as Sting, Alphee, Azural, Faena, etc.). Roundup products are sometimes formulated with various amounts of surfactant, possibly containing additional surfactant components as substitutes for, or blends with, POEA. Most often, the concentration of glyphosate, on an acid basis, in these formulations is 360 g/L. This, however, is not always the case, and for certain markets where smaller quantities are needed, the base formulation is diluted with water to create more dilute products (e.g., 240, 160, 120, or 9 g/L).

For the purpose of this review, the term ª Roundupº will be used to refer to this entire family of formulations, whose ingredients are qualitatively the same but may vary in absolute amounts. In cases where these differences could lead to substantially different effects, these instances will be identi®ed in the context of a comparison among different individual formulations and ingredients. Wherever possible, this document has converted measures to metric units of weight, volume, and area. Some reports of ®eld studies have expressed concentrations in pounds, gallons, or acres, using units of acid equivalents or IPA salt active ingredient. The conversions have been made to simplify direct comparison of exposure and/or fate data whenever applicable.

Organization of Assessment

This assessment initially examines the metabolism and pharmacokinetic studies conducted with glyphosate and AMPA. This includes a review of studies conducted using oral and dermal routes of administration, as these are the predominant pathways of exposure to herbicides like Roundup. In the second section, the results of toxicology studies in animals are presented for glyphosate and AMPA followed by those conducted with Roundup and POEA. Consideration is then given to speci®c organ toxicity and other potential effects including endocrine disruption, neurotoxicity, and synergistic effects. In the next section, the effects of exposures to humans are discussed; both controlled studies and reports of occupational and other exposures are examined. This is followed by a detailed, worst-case exposure analysis for both children and adults. Finally, the results of the toxicological and exposure investigations are compared to provide an assessment of safety for humans. An outline of information presented in this assessment is shown below.

METABOLISM AND PHARMACOKINETICS GLYPHOSATE, AMPA, AND ROUNDUP

GlyphosateÐOral Dosage Studies in Rats

Introduction

Three studies were conducted to investigate the pharmacokinetics of glyphosate following a single oral dose. In the ®rst of two studies with Sprague±Dawley rats, glyphosate was administered at dose levels of 10 or 1000 mg/kg (Ridley and Mirley, 1988; Howe *et al.*, 1988). The second study was performed primarily to assess the distribution and nature of glyphosate-derived radioactivity in tissues following a 10 mg/kg dose (Brewster *et al.*, 1991). A third metabolism study was conducted by the National Toxicology Program (NTP) (1992) in the Fischer 344 strain of rat at dose levels of 5.6 and 56 mg/kg.

Two studies have been conducted to evaluate pharmacokinetic parameters in rats following repetitive oral exposure. In the ®rst study, glyphosate was fed to Wistar rats at dietary concentrations of 1, 10, or 100

METABOLISM AND PHARMACOKINETICS GLYPHOSATE, AMPA, AND ROUNDUP	**EVALUATION OF POTENTIAL SPECIFIC ORGAN/SYSTEM EFFECTS**
Glyphosate Oral Dosage Studies in Rats	Salivary Gland Changes
Absorption	Potential for Endocrine Modulation
Tissue Distribution	Potential for Neurotoxicity
Biotransformation/Excretion	Potential for Synergistic Interactions
AMPA Single Oral Dose Study in Rats	
Glyphosate/AMPA Oral Studies in Non-rodents	**HUMAN EXPERIENCE**
Glyphosate and ROUNDUP—Dermal Penetration	Irritation Studies
	Occupational Exposure
TOXICOLOGY STUDIES WITH GLYPHOSATE AND AMPA	Ingestion
Acute Toxicity and Irritation Studies	
Subchronic Toxicity Studies	**EXPOSURE ASSESSMENT**
Chronic Toxicity/Oncogenicity Studies	Dietary exposure to Residues in Food
Reproduction/Developmental Toxicology Studies	Occupational Dermal and Inhalation Exposure During Application
TOXICOLOGY STUDIES WITH POEA AND ROUNDUP	Non-occupational Exposure During Application
Acute Toxicity and Irritation Studies	Consumption of Water
Subchronic Toxicity Studies	Reentry of Treated Areas
Reproduction/Developmental Toxicology Studies	Bystander Exposure During Application
	Possible Inadvertent Exposures Derived from Specific Activities
GENETIC TOXICOLOGY STUDIES	Aggregate Exposure Estimates
Review of Studies with Glyphosate, Formulations, and AMPA	**RISK CHARACTERIZATION**
Evaluating Genotoxicity Data	Identification of NOAELs
Weight-of-Evidence Narrative	Estimation of Risks to Humans from Acute or Chronic Exposure
	Overall Conclusion and Summary Statement

ppm for 14 days followed by a 10-day period during which there was no exposure to glyphosate (Colvin and Miller, 1973a). The second repetitive dosing study was conducted to determine if repeated administration alters the metabolic fate of glyphosate. In this study, pharmacokinetic parameters were evaluated in groups of Sprague±Dawley rats given glyphosate by oral gavage at a dose level of 10 mg/kg for either 1 or 15 consecutive days (Ridley and Mirley, 1988; Howe *et al.*, 1988).

Absorption

The absorption of orally administered glyphosate was shown to be incomplete. Following the administration of a single dose of glyphosate at 10 mg/kg, approximately 30 to 36% (males and females, respectively) of the dose was absorbed. This has been determined from measurements of the area under the curve (AUC) for whole blood (compared to the AUC for rats dosed intravenously) and the urinary excretion of radioactivity. These results were con®rmed in the NTP study (1992), which showed that 30% of the administered 5.6 mg/kg dose was absorbed as determined by urinary excretion data. At the high dose of 1000 mg/kg, absorption appeared to be lower (approximately 19 to 23%) based on the percentage of material excreted in urine at 10 and 1000 mg/kg/day. In the 14-day repeated dose study conducted at dietary concentrations up to 100 ppm, it was estimated that 15% of the administered material was absorbed.

Tissue Distribution

The tissue distribution of glyphosate was investigated in Sprague±Dawley rats at 2, 6.3, 28, 96, and 168 h after the administration of a single 10 mg/kg oral dose (Brewster *et al.*, 1991). Tissue retention times were relatively short, and the vast majority of the body burden was unmetabolized parent glyphosate. Signi®cant radioactivity (. 1% of administered dosage) was detected in the small intestine, colon, kidney, and bone. Maximum concentrations in the small intestine (associated primarily with cells rather than contents) and blood were observed 2 h after oral glyphosate administration, while peak levels in other organs occurred 6.3 h after dosing. Levels of radiolabeled material in the small intestine, colon, and kidney declined rapidly. Radioactivity in bone steadily decreased over time, albeit at a slower rate than that observed in blood and other tissues. It was suggested that the slower elimination of glyphosate from bone may be due to reversible binding of the phosphonic acid moiety to calcium ions in the bone matrix; this type of binding has been shown to occur with glyphosate in soil (Sprankle *et al.*, 1975). Regardless of the mechanism involved, there has been no histological or hematological evidence of toxicity to bone in any of the toxicology studies conducted. Metabolite analysis showed that a minor metabolite was present in the gut content or colon tissue of a few animals. Analysis indicated that this metabolite was AMPA, but the small amount and transient nature of the material precluded further characterization. Essentially 100% of the radioactivity in all other

tissues/samples was shown to be parent glyphosate (Howe *et al.,* 1988).

When glyphosate was fed to Wistar rats in the diet for 14 days, steady-state tissue levels were reached within approximately 6 days of dosing (Colvin and Miller, 1973a). The highest glyphosate concentration was found in the kidneys (0.85 mg/kg tissue dry wt at the 100 ppm dosage level) followed in decreasing magnitude by spleen, fat, and liver. Tissue residues declined markedly after dosing was terminated. Ten days after dosing was discontinued, tissue levels ranged from only 0.067 to 0.12 mg/kg at the highest dosage tested. Data from the second multiple dosage study, in Sprague±Dawley rats, showed that repetitive dosing at 10 mg/kg body wt/day had no signi®cant effect on the tissue distribution of glyphosate (Ridley and Mirly, 1988).

Biotransformation/Excretion

Orally administered glyphosate is poorly biotransformed in animals. It was shown to be rapidly excreted unchanged in the urine and feces of rats. For example, in the single dose study performed by NTP, it was reported that more than 90% of the radioactivity was eliminated in 72 h. The whole body elimination kinetics were evaluated for rats given the single 10 or 1000 mg/kg body wt was found to be biphasic. The half-life of the a phase was approximately 6 h at both dose levels. The b phase half-lives ranged from 79 to 106 and 181 to 337 h for animals given the 10 or 1000 mg/kg doses, respectively. The feces was the major route of glyphosate elimination at all dose levels tested; approximately 62 to 69% of the administered dose was excreted in the feces. Less than 0.3% of an administered dose was recovered as CO_2 in expired air. In rats given glyphosate at 10 or 1000 mg/kg, the vast majority (97.5%) of the administered dose was excreted as unchanged parent material.

In the ®rst multiple dosage study (1 to 100 mg/kg body wt/day for 14 days), urinary excretion accounted for less than 10% of the dosage, while 80 to 90% of the administered material was excreted in feces. The excreted material was shown to be essentially all unmetabolized glyphosate. Upon withdrawal of glyphosate, the amount in excreta dropped sharply, but plateaued temporarily after 4 days. This plateau was attributed to redistribution of mobilized tissue residues. Evaluation of the data from the second repeat dosage study conducted at 10 mg/kg body wt/day also showed that repetitive dosing (15 days) had no signi®cant effect on the elimination of glyphosate as compared to single dosing.

AMPAÐSingle Oral Dose Study in Rats

AMPA was administered via gavage at a dose of 6.7 mg/kg (Colvin *et al.,* 1973). Only 20% of the AMPA was absorbed, while 74% of the administered dose was excreted in the feces over the 5-day period of experimental observation. The absorbed AMPA was not biotransformed and was excreted rapidly in the urine: approximately 65% of the absorbed dose was eliminated in the urine within 12 h, and essentially 100% was excreted between 24 and 120 h. Only trace residues (3 to 6 ppb) were detected in the liver, kidney, and skeletal muscle 5 days after dosing.

Glyphosate and AMPAÐOral Studies in Nonrodents

Other studies have been conducted in which glyphosate or a glyphosate/AMPA mixture was administered to nonrodent species. Data from these investigations using rabbits, goats, and chickens have shown that the absorption, and resulting tissue levels, were low.

When a single oral dose of glyphosate (6 to 9 mg/kg) was administered to New Zealand white rabbits, more than 80% of the material appeared in the feces, indicating poor oral absorption (Colvin and Miller, 1973b). Tissue levels were less than 0.1 ppm by the ®fth day after dosing.

Lactating goats were fed a diet containing 120 ppm of a 9:1 mixture of glyphosate and AMPA for 5 days (Bodden, 1988a). In a similar study, the same 9:1 glyphosate/AMPA mixture was fed to hens at dietary levels of 120 and 400 ppm for 7 days (Bodden, 1988b). The results from both studies indicated that 30% or less of the test material was absorbed. The concentrations of test material in goat milk ranged from 0.019 to 0.086 ppm at the end of the dosing period and declined to 0.006 ppm 5 days after the last dose.

When glyphosate was included in the diet of chickens at 120 ppm, residues in eggs obtained at the end of the dosing period ranged from 0.002 to 0.24 ppm and from 0.010 to 0.753 ppm at the 400 ppm dose level. When eggs were obtained 10 days after the last dose (120 ppm), residue levels ranged from nondetectable to 0.019 ppm.

Glyphosate and RoundupÐDermal Penetration

The dermal penetration of glyphosate is very low based on results from studies in rhesus monkeys and *in vitro* studies with human skin samples. Maibach (1983) studied the *in vivo* dermal absorption of glyphosate when undiluted Roundup herbicide was applied to the skin of monkeys. Penetration was slow, as only 0.4 and 1.8% of the applied dose was absorbed over 24 h and 7 days, respectively. A second study in rhesus monkeys investigated the absorption of diluted glyphosate (1:29) to simulate a spray solution (Wester *et al.*, 1991). Dermal penetration was found to be 0.8 and 2.2% at low and high dose (500 or 5400 mg/cm^2, respectively). Wester *et al.* (1991) also reported that the *in vitro* percutaneous absorption of glyphosate through human skin was no more than 2% when applied for up

to 16 h either as concentrated Roundup or as a diluted spray solution. In another *in vitro* study, glyphosate absorption through human skin was measured during a 24-h exposure period and for up to 1 day afterward. When glyphosate was applied as formulated Roundup, a spray dilution of Roundup, or another concentrated glyphosate formulation (Franz, 1983), dermal penetration rates ranged from 0.028 to 0.152% for the three materials tested.

Summary

The pharmacokinetics of glyphosate and AMPA have been thoroughly evaluated in several studies. Both of these materials have phosphonic acid moieties with low pK_as and therefore exist as charged molecules at the physiologic pHs found in the intestinal lumen. Only 15 to 36% of orally administered material given repeatedly, or as a single dose, was absorbed, thereby demonstrating that glyphosate and AMPA are poorly absorbed despite the prevailing acidic conditions. As expected for substances that are not well absorbed from the alimentary tract, the feces was the major route of elimination. The relatively small amounts of absorbed glyphosate and AMPA were rapidly excreted in urine almost exclusively as unchanged parent material. This was confirmed by the determination that levels of glyphosate and AMPA in peripheral tissues were low. Results from the multiple dose studies demonstrated that repeated oral dosing had no significant effect on elimination (compared to a single dose) and that glyphosate does not bioaccumulate. The dermal studies using glyphosate show low rates (less than 2%) of penetration with rhesus monkeys *in vivo* and human skin *in vitro*. Therefore, it is concluded that the potential for systemic exposure is limited by the combination of poor absorption and rapid excretion of glyphosate or AMPA after oral and/or dermal contact.

TOXICOLOGY STUDIES WITH GLYPHOSATE AND AMPA

Acute Toxicity and Irritation Studies

The acute toxicity of glyphosate and AMPA has been studied in laboratory animals. Oral and dermal LD_{50} values for glyphosate in rats are greater than 5000 mg/kg body wt (WHO, 1994a). The oral LD_{50} for AMPA in rats is 8300 mg/kg body wt (Birch, 1973). Using the acute toxicity classification system employed by the U.S. EPA, both glyphosate and AMPA are classified in the least toxic category (IV). These results show that the acute toxicity of glyphosate and AMPA is very low.

The potential for eye and skin irritation as well as dermal sensitization in response to glyphosate as the free acid has been evaluated in studies with rabbits and as the IPA salt in guinea pigs. In standard eye and skin irritation studies in rabbits, glyphosate (as the free acid) was severely irritating to eyes but produced only mild skin irritation (WHO, 1994a). However, the IPA salt of glyphosate, which is the predominant form of glyphosate used in formulations worldwide, was nonirritating to rabbit eyes and skin (Branch, 1981). Glyphosate did not produce dermal sensitization in guinea pigs (Auletta, 1983a).

Subchronic Toxicity Studies

Glyphosate

Mouse studies. Glyphosate was administered to B6C3F1 mice in the diet at concentrations of 0, 3125, 6250, 12,500, 25,000, or 50,000 ppm (NTP, 1992). Decreased body weight gain was observed at the two highest dietary levels in both males and females. At necropsy, the only significant finding was a dark salivary gland in one high-dose male. Alteration of parotid salivary glands was noted microscopically at and above the 6250 ppm dosage level. This histologic alteration consisted of microscopic basophilia of acinar cells and in more severely affected glands, cells, and acini appeared enlarged with an associated relative reduction in the number of ducts. The nature of this salivary gland change is further discussed in a later section. The sublingual and submandibular salivary glands were not affected. No treatment-related changes were observed in other organs, including the accessory sex organs.

There were several reasons to conclude that the salivary gland change observed is of doubtful toxicological significance. The complete discussion of the significance of changes observed in the salivary glands is presented in a later section ("Evaluation of Potential Specific Organ/System Effects"). Because these salivary gland changes are considered not to be relevant to humans, the no-observed-adverse-effect level (NOAEL) for glyphosate exposure in mice was based on the suppression of body weight gain and was set at 12,500 ppm (2490 mg/kg body wt/day, males and females combined).

In a separate study, glyphosate was fed to CD-1 mice for 13 weeks at dietary concentrations of 0, 5000, 10,000, or 50,000 ppm. The only treatment-related effect was decreased cumulative body weight gain in males and females (27 and 25% below controls, respectively) at the highest dosage tested (Tierney, 1979). When the submandibular salivary gland change was examined in this study, no changes similar to those described above for the parotid gland were observed. The NOAEL was 10,000 ppm (2310 mg/kg body wt/day).

Rat studies. Glyphosate was administered in the diet to F344 rats at levels of 0, 3125, 6250, 12,500, 25,000, or 50,000 ppm for 13 weeks (NTP, 1992). The mean body weights of males were reduced in the 25,000

and 50,000 ppm groups (6 and 18%, respectively, below control); in females, there was only a marginal effect on body weight, as the mean weight of high-dose animals was approximately 5% below the control value. Small increases in one or more red blood cell parameters were reported in males at dosages of 12,500 ppm and above. Increased serum alkaline phophatase and alanine aminotransferase values were noted at and above dietary levels of 6250 ppm (males) and 12,500 ppm (females). These increases were relatively small, not clearly related to dosage, and not associated with any histological changes of toxicological signi®cance. At necropsy, no gross lesions related to glyphosate administration were observed. Other analyses in reproductive tissues are discussed in a later section. The parotid gland changes seen in B6C3F1 mice were also noted in the parotid and, to a lesser degree, submandibular glands of rats. The sublingual salivary gland was not affected at any dosage level. Salivary gland alteration was noted at the lowest dosage tested (209 mg/kg body wt/day for males and females combined), but for reasons described below, this effect can be ignored for purposes of evaluating safety in humans. The low dosage (3125 ppm or 209 mg/kg body wt/day), therefore, is considered to be a NOAEL based on changes in serum enzymes.

In another subchronic rat study, Sprague±Dawley rats were fed diets containing glyphosate at concentrations of 0, 1000, 5000, or 20,000 ppm for 90 days (Stout and Johnson, 1987). Submaxillary salivary glands were microscopically evaluated in this study and did not show the changes noted in the parotid and submandibular glands in the NTP study. No toxicologically signi®cant effects were noted at any dosage level. Therefore, the NOAEL was set at the highest dietary exposure or 20,000 ppm (1445 mg/kg body wt/day, males and females combined).

Dog study. Glyphosate was administered by capsule to beagle dogs at dosages of 0, 20, 100, or 500 mg/kg body wt/day for 1 year (Reyna and Ruecker, 1985). There were no treatment-related effects in any of the parameters evaluated: clinical signs, body weight, food consumption, ophthalmoscopy, hematology, clinical chemistry, urinalysis, gross pathology, and histopathology. Therefore, the NOAEL was 500 mg/kg body wt/day, the highest level tested.

Summary. Glyphosate has been evaluated in several subchronic toxicity studies in mice, rats, and dogs. The dosage levels used in these studies were very high, reaching dietary levels of 20,000 to 50,000 mg/kg body wt in rodent feeding studies and a dosage of 500 mg/kg body wt/day in a dog study. The primary ®nding was a decreased body weight gain in the rodent studies at the highest dietary concentrations tested ($25,000 mg/kg body wt). This effect may have been due, at least in part, to decreased food intake resulting from dilution of the caloric content of the diet (which contained 2.5 to 5% glyphosate) and/or reduced diet palatability. An alteration in the submandibular and/or parotid salivary glands (acinar cell hypertrophy and basophilic change) was observed in some of the rodent studies; the sublingual salivary gland was not affected in any study. For reasons discussed in a later section, this ®nding is not considered to be toxicologically signi®cant or adverse. No salivary gland changes occurred in dogs. In summary, there were no treatment-related adverse effects in rats, mice, or dogs following glyphosate administration at extremely high levels for several weeks. Overall, it can be concluded that glyphosate when administered at daily dosages of up to 20,000 mg/kg body wt was well tolerated.

AMPA

Rat study. AMPA was administered in the diet to groups of Sprague±Dawley rats at dosage levels of 0, 400, 1200, or 4800 mg/kg body wt/day for 90 days (Estes, 1979). Changes that were noted included decreased serum glucose and elevated aspartate aminotransferase, but only at the highest dosage tested. An increase in calcium oxalate crystals was observed microscopically in the urine of high-dose animals, and urinary tract irritation was noted at the mid- and high-dose levels. Gross and microscopic pathology examinations did not reveal effects in any other organ. The NOAEL was 400 mg/kg body wt/day based on urinary tract irritation.

Dog study. AMPA was given to Beagle dogs via oral capsule at dosages of 0, 9, 26, 88, or 263 mg/kg body wt/day for 3 months (Tompkins, 1991). There was no treatment-related effect at any dosage level. Therefore, the NOAEL was $263 mg/kg body wt/day.

Summary. The subchronic toxicity of AMPA has been investigated in rats and dogs. Treatment-related effects were observed only at very high dosage levels. The NOAEL for rats was 400 mg/kg body wt/day, while no effects occurred in dogs even at the highest dosage tested (263 mg/kg body wt/day). Based on these results, it is concluded that the subchronic toxicity of AMPA, like that of parent glyphosate, is low.

Chronic Toxicity/Oncogenicity Studies

Glyphosate

Mouse study. CD-1 mice were administered glyphosate in the diet at concentrations of 0, 1000, 5000, or 30,000 ppm for a period of 24 months (Knezevich, 1983). Total body weight gain in males was reduced at the end of the study (; 26% below control) at the highest dosage tested. Also in males, increased incidences of liver hypertrophy and necrosis were observed micro-

scopically at the high-dose level. An apparent increase in the occurrence of epithelial hyperplasia (slight-to-mild) of the urinary bladder in mid- and high-dose males was not considered treatment related because the incidence and severity of this lesion, common to the strain of animals used, showed no correlation with dosage. The NOAEL for chronic toxicity effects was 5000 ppm (885 mg/kg body wt/day) based on the effects on body weight and liver histology. In males, a small number of benign renal tubular adenomas were present in control and treated groups, but the incidences in treated groups were not signi®cantly different by pairwise comparison to concurrent controls or by a trend test and were within the historical control range. Also, no related preneoplastic lesions were observed. Based on a weight-of-evidence evaluation, no treatment-related adenomas occurred. This conclusion was also reached by the U.S. EPA and an independent group of pathologists and biometricians under the auspices of U.S. EPA's Scienti®c Advisory Panel (SAP) (U.S. EPA, 1992a). The WHO (1994a) has also concluded that glyphosate did not produce an oncogenic response in this study. Accordingly, glyphosate is concluded to be noncarcinogenic in the mouse.

Rat studies. When glyphosate was fed to Sprague±Dawley rats at dietary concentrations of 0, 60, 200, or 600 ppm for 26 months, no treatment-related chronic effects were observed (Lankas, 1981). However, the incidence of interstitial cell tumors in the testes of high-dose males (6/50 or 12%) was above concurrent controls. This imbalance was not considered to be treatment-related because: (1) it was not accompanied by an increase in Leydig cell hyperplasia (an expected preneoplastic effect); (2) the incidence was within the historical control range; and (3) no increase was observed in the subsequent study conducted at higher dose levels (see below). Therefore, this study is concluded to reveal no oncogenic effect.

In a second study with the same strain of rat, glyphosate was administered at dietary concentrations of 0, 2000, 8000, or 20,000 ppm for two years (Stout and Ruecker, 1990). Treatment-related effects occurred only at the high-dose level and consisted of decreased body weight gain (23% below control at 20 months, the time of maximal depression) in females and degenerative ocular lens changes in males, as well as increased liver weights and elevated urine pH/speci®c gravity in males. There was a statistically signi®cant increase in the incidence (9/60 or 15%) of in¯ammation in the gastric squamous mucosa of middose females that was slightly outside of the historical control range (0 to 13.3%). Nevertheless, there was no dose-related trend across all groups of treated females, as in¯ammation was found in only 6 of 59 (10.2%) high-dose females. In males, there was no statistically signi®cant increase in stomach in¯ammation in any group of treated animals, and the frequency of this lesion fell within the historical control range. At the end of the study, usually a time when the occurrence of such lesions is greatest, there was a very low incidence of in¯ammation in treated animals examined. Considering all these factors, it is doubtful that the in¯ammation is treatment related. Small numbers of benign thyroid and pancreatic tumors were found in control and treated groups. The occurrence of thyroid and pancreatic tumors was judged to be sporadic and therefore unrelated to treatment for the following reasons: (1) the tumors observed were within the historical control range; (2) they did not occur in a dose-related manner; (3) they were not statistically signi®cant in pairwise comparisons and/or trend tests; and (4) there were no increases in preneoplastic changes. Accordingly, glyphosate is concluded to be noncarcinogenic in the rat.

Based on these responses to prolonged exposure of glyphosate in rats, the 8000 ppm dosage level (409 mg/kg body wt/day, males and females combined) is concluded to be the NOAEL for chronic toxicity. This dosage was also determined to be the NOEL by the U.S. EPA (1993) and was considered to be the NOAEL by the WHO (1994a).

Summary. The chronic toxicity and oncogenic potential of glyphosate have been evaluated in one study with mice and two studies with rats. Few chronic effects occurred, and those were limited to the highest dietary levels tested (20,000 ppm in rats or 30,000 ppm in mice). Glyphosate was not oncogenic to either species. The studies and their results have been evaluated by a number of regulatory agencies and by international scienti®c organizations. Each of these groups has concluded that glyphosate is not carcinogenic. For example, the weight of evidence for carcinogenic hazard potential has been expressed by U.S. EPA using summary rankings for human and animal cancer studies. These summary rankings place the overall evidence in classi®cation groups A through E, Group A being associated with the greatest probability of human carcinogenicity and Group E with evidence of noncarcinogenicity in humans. The U.S. EPA classi®ed glyphosate in Category E, ª Evidence of Non-carcinogenicity in Humans º (U.S. EPA, 1992a).

AMPA

Although lifetime studies were not conducted specifically with AMPA, its chronic toxicity and oncogenicity can be assessed by examining results from the second 2-year rat study with glyphosate (Stout and Ruecker, 1990). Analysis of the test material used in that study showed it contained 0.68% AMPA (Lorenz, 1994). On this basis, it can be concluded that AMPA was present at dietary levels of 13.6, 54.4, or 136 ppm at the 2000, 8000, or 20,000 ppm target concentrations for glyphosate, respectively. These dietary levels corresponded to

dosage levels of 0.69, 2.8, or 7.2 mg AMPA/kg/day. In that study, there were no chronic effects at the mid dose level and no treatment-related tumors at any dosage tested. Therefore, it can be concluded that AMPA is not oncogenic at dosage levels up to 7.2 mg/kg body wt/day, and the NOAEL for chronic effects is at least 2.8 mg/kg body wt/day.

Reproduction and Developmental Toxicology Studies

Glyphosate

Reproductive toxicity. In the first of two multigeneration reproductive toxicity studies, glyphosate was administered to rats in the diet over three successive generations at dosage levels of 0, 3, 10, or 30 mg/kg body wt/day (Schroeder, 1981). An equivocal increase in unilateral renal tubule dilation was judged to be unrelated to treatment since a more extensive evaluation in the subsequent reproduction study conducted at much higher dose levels did not show such change. There were no treatment-related effects on mating, fertility, or reproductive parameters. The second study, also in rats, was conducted at dietary levels of 0, 2000, 10,000, or 30,000 ppm for two generations (Reyna, 1990). Decreased body weight gains were seen in parental animals at 30,000 ppm. Other effects at the high-dose level were reduced body weight gain in pups during the later part of lactation and an equivocal decrease in the average litter size. The NOAELs for systemic and reproductive toxicity were 10,000 ppm (; 694 mg/kg body wt/day) and 30,000 ppm (; 2132 mg/kg body wt/day), respectively.

In the subchronic toxicity study conducted in rats by NTP (1992), reduced epididymal sperm concentrations (; 20% below control) were reported in F344 rats at both the 25,000 and the 50,000 ppm levels. Nevertheless, all values were well within the normal range of sperm concentration values reported by the NTP in an analysis of their historical control data for these rodents (Morrissey *et al.*, 1988). As the apparent reductions were not related to dosage nor accompanied by decreases in epididymal weights or testicular sperm numbers/weight, the relationship to treatment is doubtful. Moreover, male fertility was not reduced in the reproduction study even at the highest dietary level tested (30,000 ppm).

An increase in estrous cycle length from 4.9 to 5.4 days was reported in the high-dose female F344 rats (50,000 ppm) (NTP, 1992). F344 rats, however, are known to exhibit highly variable estrous cycle lengths (4 to 6 days) leading Morrissey *et al.* (1988) to conclude that "stages of the estrous cycle are so variable [in F344 rats] that they may not be useful in assessing potential toxicity." Even if the estrous cycle length data were valid, they are of doubtful significance because the extremely high dosage associated with its occurrence. This dosage was several orders of magnitude greater than any exposure ever likely to be experienced by humans (see Table 9 and discussion below). As no changes in sperm counts or estrous cycling were observed in mice treated at the same extremely high dosage levels, it is concluded that glyphosate does not adversely affect sperm concentration or estrous cyclicity at any relevant dosage.

Yousef *et al.* (1995) reported that subchronic glyphosate exposure produced effects on semen characteristics in New Zealand white rabbits; the effects included reduced ejaculate volume, sperm concentration, initial fructose levels, and semen osmolality. The study also reported evidence for increased abnormal and dead sperm. There were a number of serious deficiencies in the design, conduct, and reporting of this study which make the results uninterpretable. Only four rabbits per treatment group were used, suggesting questionable statistical validity for this study. The rabbits used in this study were small for their age (32 weeks at start of the treatment schedule, 50 weeks at termination of the experiment). Animals of similar age to those described in Yousef *et al.* (1995) are supplied by a number of commercial breeders. Normal adult New Zealand white rabbits 32 weeks of age (Harlan Sprague±Dawley, Indianapolis, IN) average 3.9 kg, with male rabbits occupying the lower portion of the weight range of 3.5 to 4.3 kg. Similar animals described by Yousef *et al.* (1995) had weights that were 0.5 to 0.9 kg (16±25%) below historical norms. Weight deficiencies bring into question the health status and reproductive maturity of test animals used. Furthermore, the investigators did not actually quantify the two dosage levels used (referred to only as 1/10th and 1/100th of the LD_{50}), the purity of glyphosate, or the composition of the glyphosate formulation employed. Finally, Yousef *et al.* (1995) failed to state clearly the frequency of dosage applied to the animals in the protocol. With no accurate description of the method of delivery or quantity of chemical administered, a meaningful assessment of these studies cannot be made. Moreover a critical issue, especially in view of the authors' conclusions, is that the proper method of semen collection was not used, thereby invalidating any meaningful assessment of sperm viability, activity, and/or motility. Multiple ejaculates were not pooled to decrease the inter- and intra-animal variability in sperm number and concentration. Unfortunately, it was also unclear whether control animals were subjected to sham handling and dosing procedures, raising serious questions of indirect non-treatment-related effects given the known sensitivity of rabbits to stress. Additional points that seriously compromise this study include a lack of data for food consumption in control or treated animals, and failure to report variability in measurements for control and treated animals, preventing adequate statistical analysis to support conclusions of Yousef *et al.* (1995). Despite the 10-fold difference between the low- and high-

dose groups, dose-dependent responses were not observed. Sperm concentration data from both treated and control rabbits were well within the normal range of sperm concentration values previously reported for mature New Zealand rabbits (Desjardins *et al.*, 1968; Williams *et al.*, 1990). Based on these limitations as well as the other considerations, the data from this study cannot be used to support any meaningful conclusions.

Developmental toxicity studies. Glyphosate was administered by gavage to Sprague±Dawley rats at dosage levels of 0, 300, 1000, or 3500 mg/kg body wt/day on gestation days 6 to 19 (Tasker, 1980a). Severe maternal toxicity, including decreased weight gain and mortality (6 of 25 dams), occurred at the excessive dosage of 3500 mg/kg body wt/day and was accompanied by reduced fetal weights and viability and ossi®cation of sternebrae. The NOAEL for maternal and developmental toxicity was 1000 mg/kg body wt/day.

Glyphosate was tested for developmental toxicity in rabbits following administration by oral gavage at dosage levels of 0, 75, 175, or 350 mg/kg body wt/day from gestation days 6 through 27 (Tasker, 1980b). Frequent diarrhea was noted in several high-dose animals. Deaths occurred in 1, 2, and 10 dams from the low-, mid-, and high-dose groups, respectively. Non-treatment-related causes of death (pneumonia, respiratory disease, enteritis, and gastroenteritis) were determined for the low-dose dam as well as 1 mid- and 3 high-dose animals. In the pilot teratology study conducted immediately prior to the de®nitive study, there was no mortality at dosages of 125 and 250 mg/kg body wt/day, while mortality occurred in 80% of the animals from the 500 mg/kg body wt/day group. When these pilot data are included in the overall analysis, and when mortality in the de®nitive study is re®ned to eliminate non-treatment-related deaths, the overall mortality frequencies are 0, 0, 6, 0, 44, and 80% at 75, 125, 175, 250, 350, or 500 mg/kg body wt/day, respectively. This indicates an absence of a dose±response for treatment-related mortality below the 350 mg/kg body wt/day dosage. The death of the single middose (175 mg/kg body wt/day) dam cannot be considered a treatment-related effect given the known vulnerability of rabbits to nonspeci®c stressors and the fact that no deaths occurred at a dosage of 250 mg/kg body wt/day in the pilot study. Therefore, the NOAEL for maternal toxicity must be represented by the 175 mg/kg body wt/day dosage, based on increased mortality and various clinical signs of toxicity at the next higher dosage tested. The 175 mg/kg body wt/day dosage level was also concluded to be the NOAEL by the WHO (1994a), while the U.S. EPA (1993) considers this level to be the NOEL. Although there were no effects in fetuses at any dosage level, the NOAEL for developmental toxicity was considered to be 175 mg/kg body wt/day due to the insuf®cient number of litters available for examination in the 350 mg/kg body wt/day dosage group.

Summary. Results from several studies have established that glyphosate is not a reproductive or developmental toxicant. Glyphosate was evaluated in two multigeneration rat reproduction studies and in developmental toxicity studies in rats and rabbits. There were no effects on fertility or reproductive parameters, and glyphosate did not produce birth defects. Based on the lack of reproductive toxicity in two multigenerational studies conducted over a very wide range of dosages (; 3 to 2132 mg/kg body wt/day), there is no evidence of low-dose effects. The NOAELs for developmental toxicity are equal to or greater than the NOAELs for maternal effects, and the NOAEL for reproductive toxicity is greater than that for systemic toxicity. Therefore, there is no unique sensitivity from prenatal exposure (U.S. EPA, 1997a, 1998a). Apparent changes in sperm concentrations and estrous cycle length were reported in the NTP (1992) subchronic rat study at dosages of 1684 mg/kg body wt/day (sperm only) and 3393 mg/kg body wt/day (sperm and estrous cycle). Since these changes are not related to dosage, their magnitude falls well within the normal historical control range, and no such changes were observed in mice even at higher dosages, these ®ndings are suspect and therefore dif®cult to assess. The reported ®ndings in rats are considered biologically irrelevant because the dosages at which changes were reported are several orders of magnitude higher than any possible human exposure (see ª Human Exposure º). The U.S. EPA has recently evaluated tolerance petitions under the Food Quality Protection Act of 1996 (FQPA) (Public Law 104-170) which includes special provisions to protect infants and children. The U.S. EPA concluded that there is ª reasonable certainty º that no harm will occur from aggregate exposure to glyphosate (U.S. EPA, 1997a, 1998a). The lowest NOAEL for any reproductive study is 175 mg/kg body wt/day in the rabbit developmental study.

AMPA

Reproduction and developmental toxicity studies. The potential for reproductive toxicity of AMPA can be assessed by examining the results from the two-generation rat reproduction study with glyphosate (Reyna, 1990). In this study, the glyphosate test material contained 0.61% AMPA (Lorenz, 1994), allowing calculation of dietary concentrations of AMPA at 0, 12.2, 61, or 183 ppm. Given that no effects were seen at the middose level of this study, the overall NOAEL for AMPA is considered to be at least 61 ppm (; 4.2 mg/kg body wt/day, males and females combined) based on systemic (not reproductive) toxicity. In a developmental toxicity study, AMPA was administered by oral gavage to pregnant rats at dosage levels of 0, 150, 400, or 1000

TABLE 1
Acute Toxicity and Irritation of Roundup Herbicides and POEA Surfactant

Test material	Oral LD_{50} (mg/kg)	Dermal LD_{50} (mg/kg)	Inhalation (mg/L)	Eye irritation	Skin irritation
Roundup	. 5000	. 5000	3.18	Severe	Slight
(41% IPAG)[a]	(IV)[b]	(IV)	(IV)	(I)	(IV)
POEA	1200	. 1260	Ð	Corrosive	Severe
Roundup T/O	. 5000	. 5000	. 5.7	Moderate	Essentially none
(18%) IPAG)	(IV)	(IV)	(IV)	(III)	(IV)
Roundup L & G Ready-to-Use	. 5000	. 5000	. 8.9	Slight	Essentially none
(1% IPAG)	(IV)	(IV)	(IV)	(IV)	(IV)

[a] IPAG, isopropylamine salt of glyphosate.
[b] Roman numerals in parentheses denote EPA categories, where IV is the least toxic or irritating and I is the most toxic or irritating.
References. Roundup, oral and dermal LD_{50} (WHO, 1994a); inhalation (Velasquez, 1983a); eye irritation (Blaszcak, 1990); skin irritation (Blaszcak, 1988). POEA, all studies (Birch, 1977). Roundup T/O, oral, dermal, eye, and skin (Auletta, 1985a±d); inhalation (Bechtel, 1987). Roundup L&G Ready-to-Use, oral, dermal, eye, and skin (Blaszcak, 1987a, b, c d, e); inhalation (Dudek, 1987).

mg/kg body wt/day on gestation days 6 through 15 (Holson, 1991). Slight decreases in maternal body weight gain and fetal body weights were noted at 1000 mg/kg body wt/day. Therefore, the NOAEL for maternal and developmental toxicity is 400 mg/kg body wt/day.

Summary. AMPA has been evaluated for potential adverse effects in reproductive and developmental studies with rats. In addition, the previously discussed reproductive tissues from the 3-month dog and rat toxicity studies with glyphosate, which contains AMPA (Estes, 1979; Tompkins, 1991), were examined for organ weight, macroscopic, and microscopic effects. No adverse effects have been observed in any of these evaluations. Therefore, it is concluded that the breakdown product, like the parent glyphosate, is not a reproductive or developmental toxicant.

TOXICOLOGY STUDIES WITH POEA AND ROUNDUP

Acute Toxicity and Irritation Studies

The acute toxicity of Roundup herbicide in rats, like that of glyphosate, is very low. The acute oral and dermal LD_{50} values (Table 1) are greater than 5000 mg/kg body wt (WHO, 1994a). The 4-h inhalation LC_{50} value in rats is 3.18 mg/L (Velasquez, 1983a). Based on these values, Roundup is placed in U.S. EPA's least toxic category (IV) for acute oral, dermal, and inhalation toxicity. Thus, the Roundup formulation is considered to be practically nontoxic by all these routes of exposure.

The acute toxicity of the surfactant, POEA, is somewhat higher than for Roundup formulation. Oral (rats) and dermal (rabbits) LD_{50} values (Table 1) have been reported to be ; 1200 and . 1260 mg/kg, respectively (Birch, 1977). To put the acute toxicity in perspective, the oral LD_{50} value for POEA in rats is similar to that of vitamin A (1960 mg/kg) and greater than that of aspirin (200 mg/kg) (NIOSH, 1987). The oral LD_{50} for POEA would place it in U.S. EPA's second-least-toxic category (III). Based on these considerations, POEA is considered to be only [a] slightly toxic and does not represent an acute toxicity hazard.

POEA was reported to be severely irritating to the skin and corrosive to the eyes when tested in rabbits (Birch, 1977). The irritation potential of POEA is consistent with the surface-active properties of surfactants in general. Surfactants with these properties are intentionally used in consumer products such as soaps, shampoos, laundry detergents, and various other cleaners. By virtue of their intended physicochemical properties, POEA and the other surfactants in consumer products interact with and solubilize lipid components characteristic of skin and mucous membranes.

Surfactants used in consumer products are effective at dilute concentration. POEA is not used in concentrated form but rather is formulated at lower concentrations into an end-use product (Roundup) and later diluted to very low levels, rendering it signi®cantly less irritating. In standard studies with rabbits, concentrated Roundup herbicide was shown to be strongly irritating to eyes (Blaszcak, 1990) and only slightly irritating to skin (Blaszcak, 1988). When diluted to a concentration commonly used for most spraying applications (; 1%), Roundup was shown to be only minimally irritating to eyes and essentially nonirritating to skin (Table 1) (Blaszcak, 1987a,b). Standard dermal sensitization studies in guinea pigs were negative for both concentrated (Auletta, 1983b) and diluted (Blaszcak, 1987c) Roundup formulations. As will be discussed in a later section, controlled studies and other data from humans con®rm that Roundup herbicide does not pose a signi®cant eye or skin irritation hazard to humans.

Subchronic Toxicity Studies

POEA

Rat study. POEA was administered to Sprague±Dawley rats in the diet for 1 month at concentrations of 0, 800, 2000, or 5000 ppm (Ogrowsky, 1989). Body weight gains were reduced in males at the 2000 ppm level and in both sexes at the high-dose level. Prominent/enlarged lymphoid aggregates in the colon of high-dose females were associated with direct irritation/in¯ammatory effect of the test material. In a subsequent 3-month study with rats, POEA was administered in the diet at concentrations of 0, 500, 1500, and 4500 ppm (Stout, 1990). Among the animals from the high-dose group, effects noted included intestinal irritation, decreased food consumption and body weight gain, and some alterations in serum hematology/clinical chemistry parameters. Intestinal irritation was also observed in some animals from the 1500 ppm dosage level. Therefore, the NOAEL was 500 ppm in the diet (; 36 mg/kg body wt/day, males and females combined).

Dog study. The POEA surfactant was administered in gelatin capsules to beagle dogs for 14 weeks (Fillmore, 1973). Because gastrointestinal intolerance (as evidenced by emesis and diarrhea) was observed at a preliminary stage, dosages were increased during the ®rst 4 weeks of the study and then maintained at 0, 30, 60, or 90 mg/kg body wt/day for the ®nal 10 weeks of the study. Body weights were reduced in high-dose animals; slight decreases in low- and middose females were not always dose related and, thus, were of questionable signi®cance. The biological signi®cance of slight reductions in serum calcium and protein in mid- and/or high-dose dogs is also uncertain. While a de®nitive NOAEL was not established, the single signi®cant ®nding in this study was the inability of dogs to tolerate surfactant ingestion on a daily basis due to gastrointestinal irritation.

Roundup

Sprague±Dawley rats were exposed to Roundup herbicide by inhalation using aerosol concentrations of 0.05, 0.16, or 0.36 mg/L for 6 h/day, 5 days/week for 1 month (22 total exposure days) (Velasquez, 1983b). The only change observed was evidence of respiratory tract irritation in high-dose females. This was considered to be a direct irritant response rather than a systemic effect. Therefore, the systemic no-observed-effect concentration (NOEC) was the highest dose or 0.36 mg/L. To put this value in perspective, the highest Roundup concentration measured in air during an applicator exposure study (Kramer, 1978) was 8.7 3 10^{26} mg/L; this is approximately 40,000 times less than the NOEC from the inhalation study in rats.

The effect of dermal administration of Roundup to rabbits was examined at dosage levels of 76 and 114 mg/kg body wt/day for 21 days (Killeen, 1975). Dermal irritation was observed at the application site, but there was no indication of systemic toxicity at either dosage tested.

A subchronic study with Brahman-cross heifers was carried out by administration of Roundup via nasogastric tube at dosages of 0, 400, 500, 630, or 790 mg/kg body wt/day for 7 days, after which animals were observed for an additional 14 or 15 days (Rowe, 1987). One cow died at the high-dose level, a death believed to result from gastric irritation and vomiting, followed by aspiration pneumonia. Diarrhea and body weight loss were observed at dosages of 630 and 790 mg/kg body wt/day, which was reduced to soft feces at the 500 mg/kg body wt/day dosage level. The NOAEL was 400 mg/kg body wt/day. It was estimated that the cows received dosages of Roundup herbicide on the order of 30 to 100 times greater than the dose typically applied to foliage for agricultural weed control purposes. Clearly, such exposures would never be achieved under normal agricultural use of glyphosate or Roundup. Thus, exposure to forage sprayed at recommended use should present no hazard to ruminant animals.

Summary

The subchronic toxicity of POEA has been assessed in 1- and 3-month studies with rats and in a 14-week study with dogs. Roundup herbicide has been evaluated for possible subchronic effects in an inhalation study with rats, a dermal study in rabbits, and an oral study with cattle. It was anticipated most observed effects would be related to the surface-active properties and associated irritation potential of surfactants. These studies con®rm that irritation at the site of contact was the primary ®nding with the test material. In the oral studies with POEA and Roundup, some secondary effects were noted in addition to the gastrointestinal irritation. These included decreased food intake and body weight gain in rats and dogs and diarrhea and an associated slight body weight loss in cattle. There was no systemic toxicity in the inhalation and dermal studies with Roundup. No indication of speci®c target organ toxicity was observed in any of these studies. Therefore, it is concluded that the only changes produced were nonspeci®c effects that might normally be expected from repeated daily high-dose exposure to any material with signi®cant surface-active properties.

Reproduction and Developmental Toxicology Studies

Developmental Study

POEA was administered by gavage to pregnant Sprague±Dawley rats on gestation days 6 through 15 at dosages of 0, 15, 100, and 300 mg/kg body wt/day

(Holson, 1990). Signi®cant maternal toxicity was noted at the highest dosage tested, while minimal effects (decreased food consumption and mild clinical signs) occurred at the middose level. There were no effects in fetuses at any dosage. The NOAELs for maternal and developmental toxicity were shown to be 15 and 300 mg/kg body wt/day, respectively. The POEA surfactant is not a teratogen or a developmental toxin in rats.

Summary

The developmental toxicity of POEA has been evaluated in rats. Subchronic toxicity studies with the surfactant and/or Roundup herbicide have also been conducted in rats, rabbits, and dogs. In these studies, gross and microscopic pathology examinations were conducted on several reproductive tissues including ovaries, uterus, testes, and epididymis. No developmental effects or changes in reproductive tissues were found in any of these evaluations. There is no evidence that the surfactant or Roundup herbicide adversely impacts reproductive function.

GENETIC TOXICOLOGY STUDIES

Introduction

The consideration of the carcinogenic potential of Roundup, its active constituent ingredient glyphosate, or any of its other constituent ingredients can be assessed in a number of ways. Short-term tests for mutation, or for other evidence of genotoxic activity, allow identi®cation of alterations in the genome. A primary purpose of such tests is to provide information on the production of heritable changes (mutations) that could lead to further adverse biological consequences. An initial and prominent question that tests for genotoxicity is designed to answer is whether the chemical (or any derivative) interacts directly with and mutates DNA (Williams, 1989). Such interactions are known to bring about changes in gene expression or to affect other key biological processes. However, there is clear evidence that some short-term tests demonstrate effects of toxicity that may or may not support direct interaction with DNA. Finally, some chemical exposures show no effect at low dosages and can be shown to be dependent on a threshold of exposure to produce an effect. The production of such indirect effects is often limited to conditions of high dose, which may be irrelevant to health risk assessment. The analysis that follows examines the most relevant endpoints to consider in evaluating evidence and any possible genotoxic action of Roundup in general and glyphosate in particular in terms of "direct DNA effects" or "indirect" genotoxic effects. The database of results from tests related to effects on genetic material and the production of mutational events is presented in Table 2. The following discussion details individual results, where appropriate, and then evaluates these results in a weight-of-evidence narrative that takes into account all the data available.

Glyphosate and Roundup

Glyphosate was negative in standard, validated mutagenicity assays conducted according to international guidelines and in GLP-compliant facilities. The database is, as is often the case, not entirely without some positive results, and these will be addressed below. Data related to endpoints for genotoxicity will be discussed in the following manner: ®rst, *in vitro* and *in vivo* test results will be examined, followed by a discussion of evidence for production of DNA reactive species.

Gene Mutation Studies

Technical glyphosate has not been found to be mutagenic in several *in vitro* bacterial mutation assays using *Salmonella* and *Escherichia coli* tester strains. Multiple studies have been conducted in several strains of *Salmonella typhimurium* at concentrations up to and including cytotoxic levels with and without an exogenous source of metabolic activation (Li and Long, 1988; Moriya *et al.,* 1983; NTP, 1992; Wildeman and Nazar, 1982). In *E. coli,* glyphosate did not induce reversion at the *trp* locus in strain WP2 (Li and Long, 1988; Moriya *et al.*, 1983). These results con®rm the absence of evidence in a sensitive system of mutation induction by glyphosate, even in the presence of various activating systems.

In mammalian cells, glyphosate was nonmutagenic at the HGPRT locus in Chinese hamster ovary cells treated *in vitro* with or without microsomal activation systems, even at doses that were toxic (Li and Long, 1988).

Several studies have tested herbicide formulations including Roundup, Rodeo, and Direct for mutation induction in bacteria. Four studies were negative (Kier *et al.,* 1997; Njagi and Gopalan, 1980), but one gave equivocal results (Rank *et al.,* 1993). The difference between herbicide formulations such as Roundup and glyphosate (usually as the IPA salt) used in genotoxicity assays is generally limited to the inclusion of a surfactant. Such surfactants include POEA and a similar, longer-chain tallow amine surfactant. Addition of surfactants generally increased the toxicity of the formulation compared to glyphosate alone in the *Salmonella* strains because these tester strains are particularly sensitive to substances that affect membrane surface tension. Toxicity of the formulations was observed at concentrations at which glyphosate content was only 0.5 mg/plate without S9 activation and 1.5 mg/plate when S9 was added. POEA is inactive in *S. typhimurium* strains TA98, TA100, TA1535, and TA1537 and concentrations of up to 1.0 mg POEA/

TABLE 2
Summary of Results on the Genotoxicity of Glyphosate, Roundup, and Other Glyphosate Formulations

Test organism	Endpoint	Compound (purity)	Dose LED/ HID[a]	Evaluation[b] Without S9	With S9	Reference
			Gene mutation			
S. typhimurium TA98, TA100	Reverse mutation	Glyphosate (not speci®ed)	0.025 mg/plate	2	2	Wildeman and Nazar (1982)
					S9 plant	
S. typhimurium TA98, TA100, TA1535, TA1537, TA1538	Reverse mutation	Glyphosate (not speci®ed)	5 mg/plate	2	2	Moriya *et al.* (1983)
S. typhimurium TA98, TA100, TA1535, TA1537, TA1538	Reverse mutation	Glyphosate (98%)	5 mg/plate	2	2	Li and Long (1988)
S. typhimurium TA97, TA98, TA100, TA1535	Reverse mutation	Glyphosate (99%)	10 mg/plate	2	2	NTP (1992)
S. typhimurium TA98, TA100, TA1535, TA1537, TA1538, TA1978	Reverse mutation	Roundup (glyphosate as isopropylamine salt, 36%)	5 mg/plate	2	2	Njagi and Gopalan (1980)
S. typhimurium TA98	Reverse mutation	Roundup (glyphosate 48%; POEA)	1.44 mg/plate	2	2	Rank *et al.* (1993)
S. typhimurium TA100	Reverse mutation	Roundup (glyphosate 48%; POEA)	0.72 mg/plate	2	1	Rank *et al.* (1993)
S. typhimurium TA98, TA100, A1535, TA1537	Reverse mutation	Roundup (glyphosate 30.4%; 15% POEA)	0.5 mg/plate	2	2	Kier *et al.* (1997)
S. typhimurium TA98, TA100, A1535, TA1537	Reverse mutation	Rodeo (glyphosate as isopropylamine salt, 54%)	5 mg/plate	2	2	Kier *et al.* (1997)
S. typhimurium TA98, TA100, A1535, TA1537	Reverse mutation	Direct (glyphosate as ammonium salt 72%; surfactant)	0.5 mg/plate	2	2	Kier *et al.* (1997)
E. coli WP2 *hcr*	Reverse mutation	Glyphosate (not speci®ed)	5 mg/plate	2	2	Moriya *et al.* (1983)
E. coli WP2 *hcr*	Reverse mutation	Glyphosate (98%)	5 mg/plate with S9, 1 mg/plate without S9	2	2	Li and Long (1988)
CHO cells (HGPRT)	Reverse mutation	Glyphosate (98%)	22.5 mg/mL	2	2	Li and Long (1988)
D. melanogaster	Sex-linked recessive lethals	Roundup (glyphosate 41%; POEA) (chronic to pupation)	1 mg/L (1 ppm)	1	0	Kale *et al.* (1995)
D. melanogaster	Sex-linked recessive lethals	Roundup (not speci®ed)		2	0	Gopalan and Njagi (1981)
			Chromosomal aberration			
Allium cepa (onion root tip)	Chromosomal aberrations	Glyphosate (isopropylamine salt)	2.88 mg/L	2	0	Rank *et al.* (1993)
Allium cepa (onion root tip)	Chromosomal aberrations	Roundup (glyphosate 48%; POEA)	1.44 mg/L	1	0	Rank *et al.* (1993)

TABLE 2Ð *Continued*

Test organism	Endpoint	Compound (purity)	Dose LED/HID[a]	Evaluation[b] Without S9	Evaluation[b] With S9	Reference
Peripheral lymphocytes (human) *in vitro*	Chromosomal aberrations	Glyphosate (. 98%)	0.56 mg/mL with S9, 0.33 mg/mL without S9	2	2	van de Waart (1995)
Peripheral lymphocytes (human) *in vitro*	Chromosomal aberrations	Glyphosate (. 98%)	1.4 mg/L	1	0	Lioi *et al.* (1998a)
Peripheral lymphocytes (bovine) *in vitro*	Chromosomal aberrations	Glyphosate (. 98%)	2.9 mg/L	1	0	Lioi *et al.* (1998b)
Rat bone marrow (*in vivo*) 6, 12, 24 h	Chromosomal aberration	Glyphosate (98%)	1.0 g/kg	2	0	Li and Long (1988)
Peripheral blood (human) *in vitro*	SCE	Roundup (not speci®ed)	2.5 mg/mL	6	0	Vigfusson and Vyse (1980)
Peripheral blood (human) *in vitro*	SCE	Glyphosate (99.9%)	1.0 mg/mL	1	0	Bolognesi *et al.* (1997)
Peripheral blood (human) *in vitro*	SCE	Roundup (glyphosate 30.4%; 15% surfactant)	0.1 mg/mL	1	0	Bolognesi *et al.* (1997)
Peripheral blood (human) *in vitro*	SCE	Glyphosate (. 98%)	1.4 mg/L	6	0	Lioi *et al.* (1998a)
Peripheral lymphocyttes (bovine) *in vitro*	SCE	Glyphosate (. 98%)	2.9 mg/L	6	0	Lioi *et al.* (1998b)
V. faba (root tips)	Micronucleus test	Solado (glyphosate 21%)	1.4 mg/g soil	2	0	De Marco *et al.* (1992)
Mouse bone marrow (*in vivo*), dietary for 13 weeks	Micronucleus test	Glyphosate (99%)	11,379 mg/kg/day	2	0	NTP (1992)
Mouse bone marrow (*in vivo*) ip injection, 24 h, 48 h	Micronucleus test	Glyphosate (not speci®ed)	200 mg/kg	2	0	Rank *et al.* (1993)
Mouse bone marrow (*in vivo*) ip injection, 24 h	Micronucleus test	Roundup (glyphosate 48%; POEA)	200 mg/kg	2	0	Rank *et al.* (1993)
Mouse bone marrow (*in vivo*) ip injection	Micronucleus test	Glyphosate (99.9%)	300 mg/kg	1	0	Bolognesi *et al.* (1997)
Mouse bone marrow (*in vivo*) ip injection	Micronucleus test	Roundup (glyphosate 30.4%; 15% surfactant)	135 mg/kg	1	0	Bolognesi *et al.* (1997)
Mouse bone marrow (*in vivo*) ip injection	Micronucleus test	Roundup (glyphosate 30.4%; 15% POEA)	555 mg/kg	2	0	Kier *et al.* (1997)
Mouse bone marrow (*in vivo*) ip injection	Micronucleus test	Rodeo (glyphosate IPA 54%; water)	3400 mg/kg	2	0	Kier *et al.* (1997)
Mouse bone marrow (*in vivo*) ip injection	Micronucleus test	Direct (glyphosate 72% as NH_4 salt; surfactant)	365 mg/kg	2	0	Kier *et al.* (1997)
Mouse (*in vivo*) gavage	Dominant lethal	Glyphosate (98.7%)	2000 mg/kg	2	0	Wrenn (1980)
		DNA damage/reactivity				
B. subtilis H17, rec1; M45, rec2	*rec*-assay	Glyphosate (98%)	2 mg/disk	2	2	Li and Long (1988)
Rat hepatocytes (exposed *in vitro*)	UDS	Glyphosate (98%)	0.125 mg/mL	2	2	Li and Long (1988)